AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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"AMONG THE SAVAGES."—DRAWN BY WM. M. CARY.—*Engraved for the American Agriculturist.*

Wild horses are very clannish in their ways. If a strange horse enters a herd, he meets with a reception that is more demonstrative than friendly. The artist has represented a horse which has strayed from a train, and fallen in with his wild brethren. He fares as badly as would his owner, should he fall, defenceless, among a party of savages. The wild horse, or mustang, is the incarnation of viciousness. It roams the prairies with a certain rude grace, but submits sullenly to captivity, and though tough and serviceable, is seldom to be trusted. Few, who have not seen them, can have an idea of the immense numbers of wild horses upon the plains of Texas. The writer has seen them by thousands, in every direction, as far as the eye could reach. In some places they were annoying in their approaches, sweeping by the camp at full speed, and making imminent a stampede of the mules and horses. It was sometimes necessary to fire upon the animals to keep them away from the camp. Upon one occasion the train, while moving, was in great danger from the wild herds. Mules are very timid animals, and when once frightened, they become uncontrollable. The wild horses were so numerous, and dashed by the train with such a noise, that the drivers could not control their mules, and it was necessary to stop and secure them. As it was, one team of six mules escaped, and was only recovered after a long chase across the prairies. The direction of the wild herd was changed by a few shots, and after some delay the journey was resumed. The wild horses, now so numerous, are descended from domesticated animals, and are frequently made captives by the Mexicans and Indians, who catch them with the lasso. The murderous Mexican bit soon brings him under the control of a master.

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Calendar for July.

Day of Month.	Day of Week.	Boston, N. England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises.	Sun sets.	Mo'n sets	N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises	Sun sets.	Mo'n sets.	Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises.	Sun sets.	Mo'n sets.
		H. M	H. M	H. M.	H. M	H. M	H. M.	H. M	H. M	H. M.
1	F	4 26	7 40	9 51	4 32	7 35	9 47	4 38	7 29	9 43
2	S	4 26	7 40	10 28	4 32	7 35	10 25	4 38	7 29	10 22
3	S	4 27	7 40	11 1	4 33	7 34	10 59	4 39	7 29	10 57
4	M	4 28	7 40	11 34	4 33	7 34	11 33	4 39	7 28	11 32
5	T	4 29	7 39	morn	4 34	7 34	morn	4 40	7 28	morn
6	W	4 29	7 39	0 2	4 35	7 34	0 2	4 41	7 28	0 2
7	T	4 30	7 39	0 33	4 35	7 33	0 34	4 41	7 28	0 36
8	F	4 30	7 38	1 4	4 36	7 33	1 7	4 42	7 27	1 9
9	S	4 31	7 38	1 41	4 37	7 33	1 44	4 42	7 27	1 48
10	S	4 32	7 38	2 23	4 37	7 32	2 28	4 43	7 27	2 32
11	M	4 33	7 37	3 11	4 38	7 32	3 16	4 44	7 26	3 22
12	T	4 33	7 37	rises	4 39	7 31	rises	4 44	7 26	rises
13	W	4 34	7 36	8 25	4 39	7 31	8 20	4 45	7 26	8 15
14	T	4 35	7 36	9 4	4 40	7 30	9 1	4 46	7 25	8 56
15	F	4 36	7 35	9 39	4 41	7 30	9 36	4 46	7 24	9 33
16	S	4 37	7 34	10 8	4 42	7 29	10 6	4 47	7 24	10 4
17	S	4 37	7 34	10 35	4 43	7 29	10 33	4 48	7 23	10 32
18	M	4 38	7 33	10 59	4 44	7 28	10 59	4 49	7 23	10 58
19	T	4 39	7 32	11 24	4 44	7 27	11 25	4 50	7 22	11 26
20	W	4 40	7 31	11 50	4 45	7 26	11 52	4 51	7 21	11 53
21	T	4 41	7 30	morn	4 46	7 26	morn	4 52	7 21	morn
22	F	4 42	7 30	0 18	4 47	7 25	0 20	4 52	7 20	0 23
23	S	4 43	7 29	0 48	4 48	7 24	0 51	4 53	7 19	0 55
24	S	4 44	7 28	1 23	4 48	7 23	1 27	4 54	7 18	1 32
25	M	4 45	7 27	2 14	4 49	7 23	2 19	4 55	7 18	2 24
26	T	4 46	7 26	2 53	4 50	7 22	2 58	4 56	7 17	3 3
27	W	4 47	7 25	3 48	4 51	7 21	3 53	4 57	7 16	3 58
28	T	4 48	7 24	sets	4 52	7 20	sets	4 58	7 15	sets
29	F	4 49	7 23	8 27	4 53	7 19	8 24	4 58	7 14	8 20
30	S	4 50	7 22	9 4	4 54	7 18	9 1	4 59	7 13	8 59
31	S	4 51	7 21	9 35	4 55	7 17	9 31	4 59	7 12	9 32

PHASES OF THE MOON

MOON.	BOSTON.	N. YORK.	WASH'N.	CHA'STON	CHICAGO.
	D. H. M.	H. M.	H. M.	H. M.	H. M.
1st Quart..	5 11 46 ev.	11 34 ev.	11 22 ev.	11 10 ev.	10 40 ev.
Full.....	12 5 51 ev.	5 39 ev.	5 27 ev.	5 15 ev.	4 45 ev.
3d Quart..	20 9 33 m.	9 21 m.	9 9 m.	8 57 m.	8 27 m.
New Moon	28 6 34 m.	6 22 m.	6 10 m.	5 58 m.	5 28 m.

AMERICAN AGRICULTURIST.

NEW YORK, JULY, 1870.

July is the month which impresses farmers most with the desirableness of knowing how to forecast the weather by premonitory indications. No doubt could one "discern the face of the sky" with anything like accuracy, injury to our grain or grass crop would be prevented, which might amount to thousands, yes, millions of dollars. The duty of the Government in this respect is clear—so far at least as to make use of telegraphic communication between the points of observation which exist all over the country, to convey to the community intelligence of approaching storms. It is not probable that thunder-showers which come up in an afternoon, and clear off before sundown, will be so foretold, that we shall not be in danger of getting our hay wet; but the great storms which do the real damage during haying and harvest, will be thus made known, and we hope the time may not be far distant.

Hints About Work.

Field Work for man and beast from early morning until late evening, leaves the farmer little time for anything else, so long as the weather remains fair. All the hands that can be got may now be employed, and it will pay to get only good men.

Working-Men need to be kept to regular hours of labor, eating, and rest. A little relaxation now and then is a grand thing too. Suppose all hands knock off work an hour or two earlier than usual of a Saturday afternoon and go to the brook or saw-mill pond for a frolic and a swim—depend upon it they will feel better and work better all the coming week. Good, satisfactory food is essential to having faithful work done.

Working-Animals should be very regularly fed and watered, and never over driven if it can be avoided.—Horses must be kept out of drafts, and not watered nor fed grass or grain until cool. Oxen when weary should have food and rest—be unyoked and allowed to lie down if they will. Many oxen will not willingly lie down in the yoke.

Sheep ought to have access to water, though they get along better than any other stock without it.—If, however, we have a succession of dry, cloudy nights, when no dew falls, they may suffer if not watered; and pains should be taken to drive them to water once, daily. The Fly will begin to cause them trouble—see article on Grub-in-the-Head, p. 257. If drouth and the lack of upland pasturage force the sheep into the wet grounds, foot-rot may appear, and any lameness should be investigated and proper remedies employed. Early lambs should be weaned, by separating them from the ewes, and putting them on good, fine pasture, out of hearing of each other's call. Look to the ewes in full milk, hurdle them and draw the milk, manipulating the udders if red and swollen.

Swine, if in close pens, should have weeds and sods, and all the waste litter of the farm to work over into manure. Breeding stock ought to have the range of a clover patch—or of more extensive pasture ground. There is no better place for hogs than a well established apple orchard; and a sow with pigs ought surely to have good pasturage, besides the very best feed. Remember, many a sow gives more and richer milk than a good cow, and must have enough feed to enable her to do it.

Haying ought to be well under way. It is often difficult to know which field to cut next. As a rule, cut clover and orchard grass first; though, if white daisies are abundant enough to make up a considerable portion of the hay, they ought to be cut before they come into full blossom. When clover begins to fail, and timothy gains strength on a piece of meadow, the former may be in a measure neglected, and it is best to wait until the timothy is in full blossom. Meadows in which red-top prevails seldom carry clover long—at any rate the two are an unfortunate combination. The piece will not be fit to cut until the first growth of clover has died, and a new growth appeared, and this makes about as poor hay as can be. The second growth of clover will make horses slabber in midwinter, and the sticks of dead clover of the first growth are worth no more than birch brush. If let alone on congenial spots, red-top will drive out almost everything else; and the land will produce a moderate burden of fine, excellent hay, which is fit to cut last of all.

Harvesting Grain.—Make full preparations and be ready for a fair day, when the grain is pretty near right. When oats are raised to be consumed upon the place, it is best to cut them early, while but few heads approach ripeness, as they usually ripen very unevenly. This is supposing the straw to be fed. Otherwise let the majority of them approach ripeness, unless they lodge, in which case cut before they get damaged. Exactly the reverse practice is best with wheat. If it is to be sold it should be cut in the dough state, because a larger quantity of fine flour may be made from it than if cut later; but if it is to be eaten on the farm, better and healthier bread may be made, and a greater weight obtained, if it stands until it approaches ripeness.—The same is true of rye. Let barley be as nearly ripe as it will be safe to have it, to avoid shrinking and shelling; and cut, bind, and shock the same day.

Preparing Land for Winter Wheat.—Wheat is one of our most important crops. The preparation of the land is largely this month's work. *On Summer Fallow.*—Till thoroughly to kill weeds, and make the land mellow and moist. Three plowings is the best preparation for heavy land. Roll and harrow between the plowings; plow immediately before sowing, and drill in the seed at once. After this, no rolling and little harrowing will be required. *On a Clover Lay.*—Where a crop of clover is plowed under in June, it is quite common not to plow the land again, but merely to work the surface and keep down the weeds by the use of the cultivator and harrow. In many cases it is better to plow the land again a short time before sowing; but if some rich, well rotted manure could be worked into the surface with a Shares' harrow, gang-plow or cultivator, it might be better to let the clover sod lie undisturbed. *After Barley or Oats.*—The sheaves may be set up in straight rows of shocks five or six rods apart, and the land between them raked clean with a steel-toothed rake. The land may then be harrowed, and a week or ten days gained, at the best of all seasons of the year for killing weeds. The best farmers plow immediately after the barley is off, and then cultivate and harrow the land thoroughly, and plow again before sowing the wheat.

When barley, oats, or peas, precede a crop of winter wheat, the land is much drier than a properly managed summer fallow, and in seasons of severe drouth, it is no easy task to get such land mellow and moist enough to germinate the seed. We should work the soil two or three inches deep immediately after harvest, and leave the stubble and loose soil on the surface to act as a mulch, and prevent evaporation. We must keep working this surface soil for a month or six weeks with a cultivator, harrow, and roller, to prevent the growth of weeds, and to pulverize the clods. Then plow and drill in the seed immediately. *After Beans or Corn.* The preparation must be done while the crops are growing, giving as much extra tillage as possible.

Manuring Grass Land.—No doubt hot, reeking manure in which ammonia is formed and escaping, loses a good deal of its value in being spread upon a meadow, and exposed to the sun and winds. But that which is not in this condition loses very little, and one overhauling and mixing with muck or earth will effectually prevent loss. Fine compost of this kind, with a little bone-dust and ashes, is the very best dressing mowing lands can have, and it should be applied freely as soon as the grass is cut. A half-rainy day is just the time; then, especially if it rains hard after it is spread, the grass gets the most benefit, and the quick start it will make, and the rapidity with which it will cover the manure out of sight will please every one.

Hoeing and Weed Killing.—Some "hoed crops" will be growing out of hand, and must be "laid by." Our rule is to keep at work stirring the soil and killing weeds as long as it can be done without more damage than profit. When that occurs it is hard to tell in every case. When the whiffletree sweeps down the corn, and when the potato tops no longer stand erect, it is high time to stop. After this the hand hoe may be used somewhat; but it is still more important to go through the crops named and pull the weeds by hand.

Roots.—Mangels and Sugar Beets, Carrots and Parsnips, should be tilled by horse-hoeing, and thinned by hoe and hand, if not already done. Run a one-horse subsoil plow through between the rows, as deep as the horse will draw it steadily; the effect is excellent, especially in dry weather. Common Turnips may be sown any time this month. Swedes, up to the middle. Sow evenly, using very little seed.

Buckwheat is one of our most profitable crops, at the North at least. It grows quickly, may be a second crop after wheat, rye, or early potatoes, and requires but little manure, while it smothers out many weeds hard to kill otherwise. Sow 3 to 5 pecks to the acre, according to the poorness of the land; 150 pounds of guano will make a crop on almost a blowing sand.

Soiling and Forage Crops may be put in any time this month. Indian Corn is probably better than any other except for haying or late pasturage. Sorghum makes excellent green fodder; sow each in drills 2 feet apart. Hungarian grass, and other kinds of millet will make a crop of hay if sowed early in the month. Later sown winter grain is best, but it must be kept fed off or cut to prevent its going up to head.

Work in the Horticultural Departments.

Our notes for July are written early in June. Usually at this season there have been abundant showers to promote a vigorous vegetation. This year a large extent of country is suffering from drouth; vegetation is checked and ripening premature. We can only stir the soil and hope for rain.

Orchard and Nursery.

Thinning has already been advised, and we refer to it again, as few have courage to thin sufficiently at the first going over. Fruit is likely to be very abundant, and it is all the more desirable to obtain large and fine specimens. When fruit is plenty, a poor lot is hard to dispose of at any price.

Peaches.—In most orchards there will be specimens that ripen prematurely. These, when in sufficient numbers to send to market, bring a good price. Baskets should be procured and marked, and pickers engaged. Directions for making crates are given on page 263. The fruit should be assorted into three grades. It will not pay to send poor fruit to market unless there is a very short crop.

Grafts.—If they have grown vigorously, there is danger of their being broken by winds. Pinch the more rampant shoots.

Pinching and *Pruning* should continue; the first to regulate growth; and pruning is done in anticipation by removing shoots, that have started where they are not needed, while yet young.

Budding usually commences this month, but the condition of the stock is much influenced by the season. Whenever well-formed buds are to be had and the bark of the stock will lift, it may be done.

Insects.—We have in previous months noted the principal ones. The late broods of caterpillars will need watching. Borers have generally laid their eggs. Should the grubs have penetrated the tree, dig them out as soon as discovered.

Black Knot.—Cut it out at the first appearance and burn. No doubt insects do find a lodgment in it, as they will in any soft part of the tree, but they are not the cause. It is a fungus which should not be allowed to mature and multiply.

Slugs, which so disfigure cherry and pear-trees, may be killed by dusting powdered lime from a bag.

Seeds.—Collect cherry-stones and mix with sand to prevent them from becoming too dry.

Fruit Garden.

Grape-Vines.—Keep young growth well tied up, and rub out any superfluous shoot that may start. If mildew makes its appearance, use sulphur freely. Bellows for applying it may be had at the implement stores. Young vines should not be allowed to overbear; a bunch to the shoot is all that a vine should bear at its first fruiting. Beetles and caterpillars will need hand-picking. Layers may be made of the present season's growth, by bending a shoot down and burying a portion of its length.—The extreme end of the layered shoot should be tied to a stake in an erect position.

Currants and Gooseberries.—If the useless shoots are removed as they start, but little pruning will be required in autumn.

Strawberries.—To those who would make new beds, we cannot too strongly commend the method of striking runners in pots described on page 264. The plants, as soon as rooted, may be set out, and will bear a good crop next spring.

Raspberries.—Remove the old canes as soon as the fruit is off, and hoe off all suckers not needed to grow canes for next year.

Blackberries.—The new growth, which is to bear the fruit next year, is to be kept in proper shape by pinching. The canes should not be allowed to grow more than 5 feet high, and the side shoots, which they will throw out, are to be pinched when a foot or 18 inches long.

Dwarf Trees are to be kept in the shape of bushes, pyramids, or whatever style of training may be adopted, by pinching. If a shoot is disposed to grow too long, pinch the end, and if one does not grow as desired, there is probably a more vigorous one robbing it, which should be checked by the same means. What was said about thinning in the orchard is emphatically applicable to dwarf trees. They are particularly apt to overbear, and the best fruit is only to be had by care in thinning.

Kitchen Garden.

The soil should be constantly occupied by some crop. It is very poor gardening to allow a piece, after an early crop is off, to grow up with weeds. As soon as one thing is off, spade or plow up and put in a succession crop.

Beans.—The Limas, when they have reached the tops of the poles, may be pinched. Bush sorts may still be planted.

Beets.—If sown as late as the present month will, in ordinary seasons, make a crop. Thin early.

Cabbages and Cauliflowers.—Transplant the late sorts from the seed-bed. It is well to assort the plants and use only the most vigorous, rejecting any which show malformation of the root. Slugs are often very troublesome, and may be caught by laying cabbage leaves on the ground; they will hide under the leaves, and may be destroyed. Ducks will destroy them. These plants are much benefited by frequent hoeing.

Carrots are to be kept clear of weeds until the tops prevent working between the rows.

Celery.—Sufficient was said last month on p. 221.

Corn.—The early sorts may be sown this month, and give a late picking.

Cucumbers.—Sow for pickles in well-manured soil. For seed, select the earliest and finest shaped.

Egg-Plants need all possible urging. Hoe frequently and give liquid manure. Place straw or hay under the fruit, to keep it from the ground.

Endive may be sown for late salad.

Herbs.—These are best grown as a second crop, transplanting from the seed-bed to occupy ground from which early things have been taken. They grow better late in the season than if put out early.

Leeks may be transplanted to rich soil, placing the rows a foot apart, the plants 6 inches in the row.

Lettuce.—The India is the best for hot weather, and this will do better if shaded a part of the day.

Melons.—Cultivate the ground as long as it can be done without injury to the vines. Remove all fruit that is not likely to ripen.

Onions need to be kept free from weeds. Those who live near cities usually bunch their onions and market the crop before it is ripe.

Potatoes.—Only the early sorts find a place in the garden, and these are usually dug while the tops are yet green. We open a trench and bury the tops, which decompose rapidly, and make an excellent manure for whatever crop may follow.

Rhubarb should have a rest as soon as fruit becomes plenty. Keep the flower-stalks cut off, as they exhaust the roots.

Sweet Potatoes, whether on ridges or in hills, should be kept clean until the vines cover the ground. The vines should not be allowed to root.

Squashes.—Keep the ground clean until the vines take possession of it, and then allow them to root at the joints. Look out for insects.

Tomatoes.—If training is followed, keep the plants tied up to the stake or trellis. They will bear cutting, and fruit all the better for having weak shoots cut out. If nothing better can be done, lay down some brush to keep the fruit from the ground. The "worm," as the large green caterpillar is popularly called, must be removed as soon as discovered, as it spares neither vines nor young fruit.—The notion that it is poisonous is an error.

Weeds are easily kept down if taken early enough. In many soils a sharp rake is the best implement to destroy them with. For more stubborn ones, the hoe-fork is preferable to the common hoe.

Flower Garden and Lawn.

Keeping is one of the chief things to attend to this month. Neatness in the borders, on the lawn, and in the paths, will make a small garden more pleasing than a large one badly kept.

The Lawn will require a weekly mowing. There are several excellent machines at moderate prices. The most of these scatter the grass, which wilts in a few hours, and is not noticeable. It serves as a mulch to the roots, and by its gradual decay adds vegetable matter to the soil. Annual weeds give but little trouble when the grass is mown frequently. The perennial ones should be pulled up or cut well below the surface by means of a knife, or a "spud," which is a sort of chisel with a long handle.

Margins of the turf where it borders upon a bed or a walk should be kept well defined, and no roots allowed to spread.

Supports are essential to the neat appearance of many plants. Whatever is used should be kept out

of sight as much as possible. Petunias and other bedding plants are apt to be blown about by the wind, and should have strings stretched across the bed in several directions. The strings are to be fastened to pegs which project a few inches above the surface, and are concealed by the foliage.

Climbers.—The new growth will often need directing. Do not allow the new shoots to get mixed inextricably with the old, as is apt to be the case with climbing roses and some others.

Dahlias will need tying to strong stakes, and the sluggish ones may be encouraged by liquid manure.

Bedding Plants, where planted in ribbons, need care to keep them effective. If those in front are inclined to outgrow the others, cut them back; and if the different lines intermix, cut out the straggling branches and keep the colors distinct. Coleus does all the better if cut back and made to grow dense. Some of the Cinerarias and other plants used for their gray foliage, will run up to bloom, and their buds must be pinched off.

Bulbs.—Take up when the foliage begins to turn yellow, and place them under shelter to ripen off; after which pack them away in a cool dry place until time to plant.

Seeds.—Secure as fast as they ripen. Some open their seed-vessels suddenly and scatter the contents; such should be gathered just before this occurs.—Seeds of perennials should be sown as soon as ripe.

Green-house and Window Plants.

There is not much to do to plants out of doors except to prevent them from suffering from dryness....Shade is necessary for Camellias and other plants of similar foliage....Look over the plants occasionally, and see that insects do not make a lodgment upon them....Pinch in unruly growth. ....Hanging baskets must have plenty of water in these hot days....Fuchsias in pots will do better in a partial shade....When plants are kept in the house the glass will need shading; whiting and skim-milk is the material usually applied to the glass....Make repairs while there is leisure.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending June 13, 1870, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th.	361,000	2,389,000	664,000	263,000	201,000	817,000
25 days *last* m'th.	231,000	986,000	243,500	12,500	139,000	230,000

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th.	267,000	2,988,500	1,137,000	78,000	40,000	1,228,000
25 days *last* m'th.	243,000	2,414,000	1,170,000	26,000	154,000	1,206,000

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1870	361,000	2,389,000	664,000	263,000	201,000	817,000
27 days 1869	306,000	2,363,000	1,284,000	124,000	43,000	946,000

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1870	267,000	2,988,500	1,137,000	78,000	40,000	1,228,000
27 days 1869.	248,500	2,119,000	1,516,000	107,000	31,000	1,338,000

3. *Exports from New York, Jan. 1 to June 13:*

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats*
1870	727,097	5,435,282	130,519	36,595	——	9,378
1869	430,294	3,802,539	1,328,869	——	——	40,401
1868	403,556	2,580,805	3,559,097	153,093	——	39,008

4. *Stock of grain in store at New York:*

1870.	*Wheat,* bush.	*Corn,* bush.	*Rye,* bush.	*Barley* bush.	*Oats,* bush.	*Malt,* bush.
June 7	706,478	69,845	21,891	91,630	488,143	108,775
May 10	1,158,052	110,829	20,502	126,043	440,517	83,000
April 11	1,845,186	285,946	23,249	187,172	705,811	99,988
March 7	2,509,608	494,176	59,089	278,965	1,105,194	97,139
Feb 11	2,902,638	534,003	62,912	322,425	1,193,922	36,214
Jan. 12	4,423,028	991,908	88,239	54,900	1,310,935	85,405
1869.						
Dec. 11	3,810,562	893,909	50,043	285,906	1,386,594	77,097
Nov. 10	1,616,030	698,085	31,700	31,584	281,581	66,782
Oct. 11	978,272	445,068	34,467	5,948	120,950	67,194
Sept 6	745,121	127,736	56,081	——	183,930	134,870
Aug. 9	634,262	253,155	75,797	361	50,219	105,458
July 10	581,857	328,613	71,418	2,966	259,985	97,177
June 7	697,877	385,241	107,546	383	555,993	103,746
May 11	1,056,018	394,156	107,502	17,684	613,166	77,677

5. *Receipts at head of tide-water at Albany each season to June 8th:*

	Flour. bbls.	*Wheat,* bush.	*Corn,* bush.	*Rye,* bush.	*Barley,* bush.	*Oats,* bush.
1870	38,400	1,900,000	127,700	41,200	78,900	382,500
1869	28,600	1,734,000	718,000	124,400	11,800	519,600
1868	65,700	3,664,500	3,257,400	149,300	226,300	1,964,800
1867	17,300	27,700	562,100	28,000	29,200	276,500
1866	34,200	287,200	2,490,700	64,200	44,700	898,700
1865	94,100	547,900	731,800	51,000	114,300	1,944,300

CURRENT WHOLESALE PRICES.

	May 13.	June 13.
PRICE OF GOLD	114¼	113¼
FLOUR—Super to Extra State	$4 90 @ 5 90	$5 20 @ 6 40
Super to Extra Southern	6 25 @10 00	6 25 @10 00
Extra Western	5 25 @ 9 75	5 60 @10 00
Extra Genesee	6 00 @ 8 00	6 50 @ 8 50
Superfine Western	4 90 @ 5 20	5 20 @ 5 50
RYE FLOUR	4 30 @ 5 65	4 60 @ 5 75
CORN-MEAL	4 75 @ 5 80	5 25 @ 5 75
WHEAT—All kinds of White	1 35 @ 1 85	1 50 @ 1 90
All kinds of Red and Amber	1 00 @ 1 36	1 10 @ 1 46
CORN—Yellow	1 17 @ 1 20	1 10 @ 1 25
Mixed	1 04 @ 1 17	93 @ 1 09
OATS—Western	64½@ 70	65 @ 71
State	69 @ 70	70 @ 71
Canada	— @ —	63 @ 65
RYE	1 03 @ 1 14	1 05 @ 1 14
BARLEY	70 @ 95	Nominal.
HAY—Bale ₱ 100 lb	90 @ 1 25	75 @ 1 05
STRAW, ₱ 100 lb	60 @ 1 00	50 @ 1 05
COTTON—Middlings, ₱ lb	23½@ 24¼	22 @ 22¾
HOPS—Crop of 1869, ₱ lb	10 @ 25	12 @ 25
FEATHERS—Live Geese, ₱ lb	80 @ 85	80 @ 85
SEED—Clover, ₱ lb	14 @ 14¾	13½@ 14½
Timothy, ₱ bushel	7 50 @ 8 00	7 25 @ 7 75
Flax, ₱ bushel	2 15 @ 2 25	2 20 @ 2 35
SUGAR—Brown, ₱ lb	8 @ 11½	8¾@ 11¼
MOLASSES, Cuba, ₱ gal	20 @ 45	22 @ 45
COFFEE—Rio, (Gold, in bond)	10 @ 14	9½@ 13
TOBACCO, Kentucky, &c., ₱ lb	6 @ 13	6 @ 13
Seed Leaf, ₱ lb	8 @ 70	8 @ 70
WOOL—Domestic Fleece, ₱ lb	40 @ 63	40 @ 60
Domestic, pulled, ₱ lb	20 @ 47	22 @ 45
California, unwashed	15 @ 29	17 @ 30
TALLOW, ₱ lb	9¼@ 9¾	
OIL-CAKE—₱ ton	39 00 @40 00	41 50 @42 75
PORK—Mess, ₱ barrel	29 12 @29 50	30 45 @30 62½
Prime, ₱ barrel	22 00 @23 50	22 00 @23 50
BEEF—Plain mess	10 00 @18 50	12 00 @18 00
LARD, in trcs. & barrels, ₱ lb	15 @ 17	14¾@ 16½
BUTTER—Western, ₱ lb	20 @ 35	15 @ 30
State, ₱ lb	20 @ 38	20 @ 31
CHEESE	6 @ 17½	5 @ 17½
BEANS—₱ bushel	1 20 @ 2 50	1 20 @ 2 50
PEAS—Canada, in bond, ₱ bu	97 @ 1 00	1 10 @ 1 15
EGGS—Fresh, ₱ dozen	16 @ 18¾	22 @ 24
POULTRY—Fowls & Chickens	20 @ 21	18 @ 20
Turkeys, ₱ lb	21 @ 22	18 @ 21
Geese, ₱ pair		1 25 @ 2 50
POTATOES, ₱ bbl	1 00 @ 2 00	50 @ 75
New Bermudas, ₱ bbl	7 00 @ 8 00	8 00 @ 9 50
APPLES—₱ barrel	1 50 @ 4 50	2 00 @ 6 00
SWEET POTATOES, ₱ bbl	— @ —	— @ —
TURNIPS—₱ bbl	— @ —	— @ —
CABBAGES—₱ 100	7 00 @10 00	4 00 @ 8 00
ONIONS—₱ bbl	4 00 @ 7 00	3 50 @ 5 00
CRANBERRIES—₱ bbl	— @ —	— @ —
BROOM-CORN—₱ lb	10 @ 14	10 @ 15
Tomatoes, new, per box	75 @ 1 00	75 @ 1 00
Peas, green, per bbl	— @ —	3 00 @ 3 50
Rhubarb, per 100 bunches	2 50 @ 4 50	1 75 @ 4 00
Asparagus, per bunch	25 @ 40	15 @ 28
Beans, Charleston, per crate	— @ —	3 00 @ 3 50

Gold has been less active during the month, closing heavily at 113¼....There has been an unusually active demand for the leading kinds of Breadstuffs since our last, chiefly for Spring and Amber Winter Wheat, and shipping grades of Flour, which have been sought after by English, French, and German buyers, as also to some extent on speculative account, at advanced prices. The receipts have been moderate, and the stocks in store having been much reduced, considerable sales have been made for forward delivery. At the close, Flour is quoted very firm on all grades; while Wheat is heavy and weak in price. Corn has been active and held with confidence, as a rule. Oats have been in brisk request, closing with an upward tendency. Rye has been moderately sought after by export buyers within our range. Barley has been neglected and nominal....Cotton has been in less demand and lower....Wool has been offered freely at easier prices, but has not been in much request, closing heavily and irregularly....Hay has been depressed in price, under pretty free receipts and a moderate demand ....Hops have been more active and quoted firmer toward the close....Provisions have been moderately dealt in, closing weak....Tobacco has been dull and heavy.

New York Live-Stock Markets.—

WEEK ENDING.	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*	*Tot'l.*
May 17th	5,713	56	4,213	16,672	21,434	48,088
do. 24th	6,968	84	4,214	18,781	19,784	49,831
do. 31st	6,246	70	4,026	13,816	21,605	45,763
June 7th	5,949	84	3,741	25,266	15,125	50,165
do. 14th	8,256	100	3,373	24,389	22,192	58,310
Total in 5 Weeks	33,132	391	19,567	98,924	100,140	251,157
do. *for prev. 4 Weeks*	25,121	331	14,924	57,573	57,083	155,032

	Beeves.	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
Average per Week	6,626	78	3,913	19,785	20,028
do. do. *last Month*	6,280	84	3,731	14,393	14,271
do. do. *prev's Month*	5,581	133	1,459	15,755	10,645
Average per Week, 1869	6,275	92	3,732	28,836	15,348
do. do. do. 1868	5,733	105	1,268	27,182	18,809
do. do. do. 1867	5,544	64	1,320	22,154	20,605
do. do. do. 1866	5,748	94	1,200	20,000	18,000
do. do. do. 1865	5,255	118	1,500	16,091	11,023
Total in 1869	326,280	4,827	91,033	1,499,509	798,199
Total in 1868	298,128	5,466	82,571	1,413,479	978,061
Total in 1867	293,832	3,369	69,911	1,174,154	1,102,643
Total in 1866	298,880	4,885	62,420	1,040,000	672,000
Total in 1865	270,274	6,161	71,991	836,733	573,190
Total in 1864	267,609	7,603	75,621	782,462	660,277

Beef Cattle.—The supply not being equal to the demand, prices took an upward tendency, until the last week of our report, when unusually large arrivals sent the prices down ½c. for the best qualities and 1c. for poor. Grass-fed beef averages much better, the flesh is firmer and with less waste. The weather has been extremely warm and dry for the season, and butchers refused to buy in large lots, only purchasing such as would sell from day to day from the stall. For the week ending May 31st the supply was quite insufficient, and prices advanced ½c. to ½c. per pound for good beef. We set the advance through the month over prices paid last month at from 1c.@1½c. per pound on best grades, and a little more on medium stock. Below we give the list of prices paid, the average prices, and prices for largest sales.

May 17th,	ranged	13	@17½c.	Av. 16½c.	Large sales	16	@17c.
do. 24th,	do.	14	@17¾c.	do. 16 c.	do.	do.	15½@17
do. 31st,	do.	13½	@17½c.	do. 16¾c.	do.	do.	16 @17
June 7th,	do.	13	@18 c.	do. 16¾c.	do.	do.	16 @17¼
do. 14th,	do.	10	@17½c.	do. 16 c.	do.	do.	15½@16½

Milch Cows are not so much called for, and trade is rather slow. Good cows always sell well, but we see too few of them. The supply for the past month has been mostly of rather poor stock, and consequently brought low prices. A few good cows reached as high as $100 each, but the majority sold below $70 each. Prices range about the same as last month; i. e., from $50 for poor to $90 for good. . . **Calves.**—The supply was steady and even in quality during the month. The prices paid from week to week show but little change. The quality, we think, has averaged better than last month. Calves are seldom so poor as to sell for less than 7c. a pound, and it takes a good one to bring 10c. Some very extra fat sold as high as 10½c. per pound, but this is a little above the market. We quote prices at from 7c.@10c. per pound.. **Sheep.**—The numbers have been large and gradually increasing each week. Trade has been slow, except for very best quality, and prices are on the decline. Some very poor lots brought only 4¾c. per pound, and good sheep are offered at from 7c.@7½c. per pound. Lambs are plenty and sell at 13c.@14c. from fair to good; lighter lots go at 10c.@12c., while a few very extra brought 14½c. per pound... **Swine** go almost at once to the slaughterers, and but few are on sale alive. The arrivals, it will be seen, have been slightly larger than last month, with but little change in price. The few sales for live hogs were at from 9¾c.@9¾c. Dressed pork at the close of our report brings 12½c. per pound.

Storm and Flood Signals.

—A. Watson, Washington, D. C., sends us a circular from which we extract the following: "It is estimated that more than one-fourth of the hay and grain crops are, on an average, injured annually by storms during harvest. Large quantities are cut down, and then a storm comes on suddenly or as a settled rain, and they get wet to a degree that they are materially damaged. If farmers had warning of these approaching storms in time to get their grain or hay under cover, or in a situation to shut out the rain, much of this injury would be prevented. By the adoption of the following simple plan, it is believed that this can be effected at a trifling cost. When a storm has formed and commences to travel in any certain direction, the first telegraph station or stations over which it passes are to send the news to all the telegraph stations at cities, county-seats, and principal towns, scores or a hundred miles in advance, according to the kind of storm or probable distance that it may travel, always keeping a suitable distance in advance. At each city, county-seat and principal town, a cannon is to be kept ready by the officials at the court-house, or by a fire company, and as soon as the news is received of a coming storm, it is to be fired THREE times; at intervals of *one* minute if a tornado, thunder or hail storm, terrific gale or any destructive storm is approaching; at intervals of *three* minutes if an ordinary rain storm is approaching *rapidly*; at intervals of *six* minutes if an ordinary rain storm is approaching *slowly* and at intervals of *ten* minutes if a destructive river flood is approaching. In case of very destructive storms or floods, the signals may be repeated, after a suitable interval, to give additional warning. At large cities, when a destructive storm is approaching, fire and church bells may also be rung, and steam whistles be blown three times at the same intervals as the guns, to increase the warning. As a good-sized cannon can be heard from 15 to 20 miles in every direction from the place of firing, or over a space of from 30 to 40 miles square, (1,600 square miles), by firing one at each county-seat and principal town, the farmers over the whole country, in harvest time, will be warned to stop cutting, and to get their grain or hay under cover, or in a situation to shut out the rain; thus saving not only that portion which had been cut and cured previous to the warning, but also saving that portion which otherwise would have been cut during several hours or a whole day without such warning. This plan has been approved of by the Western Union Telegraph Company, which owns a large majority of the lines throughout the Union; and in order to test the system will supply telegrams of approaching storms, whenever any considerable number of cities and towns shall make arrangements to fire signal guns according to the plan proposed. Through a recent act of Congress to establish storm signals at forts and military stations, this plan will be tested on rivers, lakes, bays, and on the coast for the benefit of commerce, and incidentally of agriculture. But as these military stations are not numerous, and will be of inconsiderable utility to agriculture, except to test the system, it is therefore recommended that agricultural societies and city and town authorities take immediate measures to establish the signals at every city, county-seat, and principal town having telegraph facilities."

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AN IMPORTANT PAPER.—In addition to the usual valuable reading matter given throughout these pages, our readers will find in this number an important article on *Poison Antidotes*, which should be carefully studied and treasured where it will always be available for reference in a moment. The house plans will meet the wants of a great number of persons directly, or indirectly by way of suggestions,—judging from the very numerous inquiries for just such information. Other plans will be given hereafter, which will answer many other inquiries for a convenient house of moderate size. This is a good time for new subscribers to secure the *American Agriculturist* cheaply for five or six months.

Are you Ashamed of your Name?—It is astonishing to see how many will write upon matters of importance to themselves, and then withhold their names. Anonymous letters, as a rule, go into the waste basket. Here are two letters in a parcel we have just taken up. "N. A. Y.," San Francisco, asks about a plant, of which we happen to have a stock, and had the name been given we should have willingly sent a specimen. Three young men, "A. B. C.," ask about going to Missouri. We cannot answer such personal matters in the paper, but we could have put them on the right track, had there been any name to which to address a reply. It is not only decidedly proper to sign letters, but in such cases as these it is to one's advantage.

The "Mexican Everbearing" Strawberry.—This berry seems to have the effect of the "insane root" upon its advocates, and at last our usually amiable friend the Gardener's Monthly is affected. Its first symptoms were shown in asserting its infallibility of judgment; but now it is taken worse, and quotes from the Hearth and Home what it calls a "brilliant specimen of vulgarity," and talks "of low bar-room wrangles" and the "slums of New York," which it never would have done but for the pernicious influence of this strawberry.

Fruit and Crops in Georgia.—J. S. Baker, of Brooks Co., writes: "A writer in your paper last year, from Georgia, stated that Raspberries cannot be raised successfully in Georgia. I raise here, within ten miles of the Florida line, Common Black Caps, Downing's Improved do., and the Imperial Red. The last, however, only on the north side of a wall. The first named I succeeded in cultivating in the suburbs of Jacksonville, Fla. We are suffering from a very severe drouth—gardens are ruined, our pindars parched, beets baked, potatoes roasted, beans and squashes well stewed—all by solar heat, without the aid of a stove. Though the heavens withhold *rain*, cotton has resumed its *reign*. The consequence is, corn is scarce, and bids fair to be far more scarce another year."

Tomatoes—Raise and Save Plenty of Them.—Nothing else, except potatoes, supplies a better standard article of food through the whole year. Cooked with plenty of bread crumbs they furnish a very palatable and nourishing table dish, especially from December to June, when fresh garden vegetables are not abundant. Having sometimes failed with glass jars, we now use tin cans, 10 inches long and 4¼ inches in diameter (cut from a sheet of tin 10×14 inches, and cheaply made). A hole, say 1¼ inch in diameter, is left in one end. The tomatoes, in large quantity at a time, are cooked well, as for the table, but without salt. They are poured into the cans hot, and a bit of tin well soldered on. We put up 15 to 40 cans at a time, and call in a tinman to do the soldering, as we have a large number of cans ready at a time. Thus closely sealed they will keep perfectly a month, a year, or five years. To provide against a poor year, and insure a full supply always, we put them up for one or two years in advance. Scald the emptied cans and set them away dry, and they can be used several times with a little help from the tinman to smooth the heads.

Preserving Strawberries, Blackberries, and Raspberries.—Pick clean, put in a porcelain-lined vessel with one-fourth to one-half the weight of white sugar, and a few spoonfuls of water, just enough at the bottom to prevent burning, as these fruits furnish juice enough. Heat slowly for a few minutes, and as soon as the sugar is dissolved, raise to a boiling heat, and dip carefully into the warm bottle so as not to break the fruit. Keep in a cellar or other pantry not subject to much heat.

Preserving Currants.—Press and strain the juice out of a quantity of currants. Then take, say, 8 pounds of fresh, stemmed fruit, and put with it a quart of this juice and 10 pounds of sugar. (A pound or two of raisins improves the flavor.) Cook the whole well, boiling it half an hour or so. Then bottle. This is a pleasant sweetmeat. When desired for eating with meats, some add a little vinegar and spices with the sugar. Bottle as above directed.

Whortleberries.—Prepare the same as strawberries, except that more water will be needed. For other, later fruits, see our next paper.

"Shall I Sell My Farm?"—A New England Farmer bought a farm of 80 acres three years ago. He owes on it $2,600, at 6 per cent interest. Has paid his interest regularly, and some on the principal; but last winter he boarded a number of railroad employes, and lost $300 by the operation. This has so discouraged him that he fears he may lose his farm, and he writes to ask if he had better sell the farm, and turn foreman. He does not give us all the facts necessary to form a correct judgment on the point; for instance, as to what his farm cost, and how much he has paid since the purchase. But we think he is unnecessarily discouraged. He has nine head of cattle, and, two years ago, took his cows to a thorough-bred Jersey bull in the neighborhood "for the purpose of improving his dairy stock." This is an encouraging sign. He is also making a good deal of manure, which is another good sign. On the whole, we would not sell unless an opportunity occurred to do so to good advantage. If the farm is improving, the debt will be paid by and by. We should be more anxious about cleaning and enriching the land, and about getting good stock, than about reducing the debt. If a farmer is getting a living, and is judiciously improving his farm, he is not doing amiss. It is not pleasant or always safe to be in debt, but a farmer may do worse things than pay 6 per cent for money.

Sundry Humbugs.—One of the worst thieves—a stealer of virtue and morality—has got a very small share of his deserts; viz., a year in the State Prison with $1,000 fine, and to stand committed until that also is paid. This is Jas. S. Colgate, who called himself the "Eureka Photograph Company." His conviction is due to the persevering efforts of Mr. James Gayler, Special P. O. Agent. We hope every one who can, will aid Mr. G.'s praiseworthy efforts to ferret out, punish, and stop swindling, especially when through the mails, by sending him any information with regard to the operations of swindlers. His address is the New-York City P. O. Our members of Congress can hardly do a better thing than to speedily pass the bill now pending, for the suppression of swindling by mail.....Rufus Stockton, pretending to be Stationer, etc., at 204 Broadway, invites money for the "queer", alias photographs, which are neither money nor counterfeits, if he sends anything. He has a wholesome fear of Mr. Gayler, and so in his circulars tells you no less than 13 times to send money "only by express." For any money sent to this scamp, nothing useful will come back.—We have a lot of "documents" from other counterfeit money pretenders, which have been referred to in previous chapters, as Hitchcock, Wagner, etc. One of these chaps has a lot of taking lithographic letters all alike, and he writes on a variety of names, P. O. addresses, etc., as D. A. Dexter, East Albany, David B. Stack, East Albany, with other names at other adjacent Post-Offices—a cheap and convenient way of dodging the officials. W. H. Wood & Co., Gleddings, C. C. Perry, A. C. Collins, etc., are new *names* of old bogus money operators.....We have many letters showing how our exposures of "Sun Light Oil," and other humbugs, have saved many dollars—tens of thousands in the aggregate.....People cannot be too cautious with respect to any of the manufactured so-called "non-explosive oils." Whatever the venders may say and show in their favor, it is safe to give all the *manufactured compounded* oils the go-by....Many circulars continue to come, from G. W. Harris & Co., "receivers"—pretending to give a "gold watch and chain valued at $200," on the receipt of 5 per cent. This is a swindle; they don't give a watch worth $200, no, nor even one costing $10. .....To H. C. A., and others. Lotteries are, of course, all humbugs and cheats. Most of the pretended agents keep all the money they get, and return nothing, unless it be bogus printed tickets containing none of the real numbers, so that it is impossible for their dupes to draw any prize. A few States still legalize lotteries. The U. S. Government has nothing to do with them, except to put a revenue tax on all dealers in lottery tickets, in common with other dealers. These dealers pay their tax, and herald this as a U. S. endorsement. Any peddler might as well claim that the U. S. Government endorsed and recommended his shoddy goods by issuing to him a peddler's license on payment of a small fee.....It can hardly be necessary to denounce such humbugs as one at Fultonville, N. Y., who advertises to send the likeness of a *future* husband or wife for 35 cents, and other particulars for *more* money. None but simpletons or fools would send money to such pretenders, and this class are not likely to *read* any caution.....To "E. M. D." It is useless to send us anonymous inquiries. The swindlers often try that scheme, hoping in some way to annoy us. .....To several subscribers: The "Howard Association" consists of an advertising doctor—a "quack," of course—who has a great skill in working upon the fears of people, and in making promises, and—in getting the last dollar that can thus be squeezed out of them....."A Victim" writes us, that he sent $5 as security to some chaps in a couple of Maine towns, who offered $250 per month. He received a few samples, too poor to give away, and that is the last he can hear from his $5. This is an old dodge still extensively practised, and is the general result of the tempting offer of $100, $200, $250, and other large sums per month to "agents." Never send any money in advance to any such parties, not even a postage stamp; and never allow them to send you anything "C. O. D." (collect on delivery.) You

cannot examine the article until you have paid the "C. O. D.," and then you are as badly off, as if you sent the money on by mail. (One party sends us specific charges against certain parties, and wants us to publish them—but don't give us his own name. How are we to prove these charges, if the accuser and witness keep out of sight? Give us the proofs and witnesses, if you wish us to assume specific charges.).....A "Watch" man sends a special circular to editors, inviting them to buy, and sell, and advertise his watches. We shall not "show up" that scheme now. If any editor is not sharp enough to see through this, he ought to try it, and get his eye-teeth cut, and then he will be prepared to enlighten his readers, and will be less likely to advertise "aluminous" and "oroide gold" watches, etc.. .... A "Greenhorn," who "feels kinder sick, and won't do so any more," sent $2, and 75 cents for postage, to get a very valuable "time-keeper" from "R. S. Ellerton, Fourth St., Williamsburg," and he got—well, "a wooden compass," *alias* wooden sun-dial, *alias* $00.00—the usual value of these advertised, cheap watches and "time-keepers." ....."Norfolk Conn's" experience in sending $10 for an Armstrong Watch, to R. F. Wood & Co., 899 Broadway, and then not being able to find any such parties there, is the usual experience of the thousands who send money for watches advertised cheap. Watches are a standard article, and cannot be bought under their real value. The low-priced advertised watches are, in 999 cases out of a 1000, cheats. Buy only of well-known, *responsible*, reputable dealers, and get what you pay for, whether it be $15 or $50, or more. This must serve as an answer to a lot of watch letters and circulars, recently sent to us, which we can not describe in detail.....A chap in W. Va. advertises stamps for making gambling cards. As none but gamblers will want his stamps, they may as well send their money to him, and get nothing in return, as to lose it otherwise—perhaps better, for then they will have less to gamble with, and will not be so able to bother and cheat others.....*Recipe sellers* are pretty numerous throughout the country — recipes for making honey, washing compounds, inks, silvering powders and fluids, vinegar, soaps, liquors, medicines, etc., etc., etc. Nearly all or quite all of them have been published as newspaper items, and few, if any of them, are of real worth; but a well-told story about them brings in the "stamps," the dollars, and the $V's. A few shrewd men have collected and printed from twenty to sixty of these recipes on single sheets, costing two to three cents each, and by advertising largely for agents, or "employment" on high pay, and a plausible setting forth of their pretended merits, and giving a very taking financial show, they have succeeded in getting thousands of persons to send them $2 to $5 for the worthless sheets. Simple-hearted, trusting people part with their money very easily, and so these chaps thrive. We repeat our oft-given caution: Pay no money for any such recipes advertised in newspapers or by circular. For example, one man gets $5 for telling you to let cider or alcohol trickle over shavings, a thing published in books and papers for half a century or more; and so of many others. .....Life Insurance Companies, on entirely new and wonderful plans, will bear letting alone severely.....To J. G. C.—Your 3-cent stamp was well invested in drawing out the real character of the so-called "American Knitting Machine Co., of Boston," if the profanity came from the operator. A genuine company would be likely to give its exact location.....But our space is more than full, with a lot more of humbugs on hand for attention.

P. S.—A great "Gift Concert," for "*California* Mercantile Library," is just advertised in glowing colors. The investor of $5 in a ticket is quite as likely to be struck with lightning, as to get the grand prize of $100,000, with his *one* chance in two hundred thousand! Send a present of $5 to the said library, *if* it needs it, and *if you* want to give it, but pray let this lottery alone. This is just what **199,372** persons will say afterwards; that is *if* the 200,000 tickets *are* sold, and *if* any distribution *is* made.

How to Manage Spring Pigs.—"I. H. C.," Delaware, Ohio, writes: "I want to know the most profitable way to manage spring pigs, whether to give them all they will eat and fat them this fall, or to winter them over and fatten them next summer?" It depends on the breed, the food at command, the conveniences for feeding, the probable price of pork next fall, and the price a year hence. We should premise, however, that in any case the pigs should have all they will eat of some kind of food. The only difference to be made between growing pigs and fattening pigs is in the character of the food. A fattening pig requires rich, concentrated food; a growing pig a more bulky and less nutritious food; but in either case the pig to do well must have all it will eat. If you have a small-boned, well-bred pig, such as a grade Essex or Berkshire or Suffolk, we think it would be far more profitable, as a rule, to fatten spring pigs than to winter them over. Let them have the run of a clover pasture, all the milk and slop from the house, and all the corn or other grain they will eat and *digest*. The latter point must be carefully attended to. Soak the meal or whole grain in water for 24 hours before feeding. If well-bred, such treatment should give you pigs that will dress 300 lbs. by the first of December. On the other hand, if you have a coarse, large-boned breed of pigs, the better plan will be to winter them over. In this case, give them the run of a good clover pasture, plenty of water, what wash from the house you have to spare, and a little grain to keep them growing as rapidly as possible. You will find this subject treated on at considerable length in "Harris on the Pig."

Transplanting and Watering.—"W. S. B.," Cass Co., Ind. In setting out cabbages, if the soil is very dry, make holes with a trowel, pour in a pint or more of water, and set the plant. We do not like to water in a dry time, unless it is necessary to save the life of the plants, as, if commenced, it must be continued until a rain comes.

Sparrows.—W. B. Christopher. The European Sparrow is thoroughly established in New York and vicinity. Imported birds are sold at about $1 a pair. They need to be furnished with small box houses, and in winter should have food scattered where they can find it. We do not know that they will destroy the Canker-worm, but have no doubt of it.

Trouble with Vines.—"D. D.," Winfield, Ind., in training Concords on the horizontal arm system, finds that some of the buds did not start. The Concord is usually very tractable. It may be that the fall pruning was too close, or that the Vine Flea-beetle has been at work at the buds.

Thomas' Smoothing Harrow.—This implement was mentioned in the Ogden Farm Papers for June, and several have inquired where it can be had. We cannot inform them. It is probably designed for a select few, or the makers would advertise.

Trial of Farm Machinery in Wisconsin.—A circular from the Ripon Farmers' Club informs us that arrangements have been made for a great trial of Farm Machinery. The time will be announced hereafter. Particulars may be had by addressing D. T. Glaze, Secretary of the Club.

Cooking Corn on the Cob.—"G. A. T.," Utica, Ill. We cannot tell whether it would or would not pay you to steam the ears of corn. Are inclined to think it would not, unless you have every convenience for the purpose, and do the work systematically, and on a large scale. We think it will nearly always pay to soak corn in water for 24 or 36 hours before feeding. See the chapter on cooking food in "Harris on the Pig." Shall be glad to hear the results of the experiments you allude to.

Is there any difference between Winter and Spring Barley? "M. V.," Kansas. Certainly; as much difference as there is between winter and spring wheat. The winter barley is heavier, and ought to bring the highest price; but in sections where little of it is raised, it will not bring as much for malting as six-rowed spring barley.

Draining.—"Kentucky" writes: "I have some wet strips of ground in my fields which have been drained by open ditches, but I find it impossible to stop bushes growing on the ditches. Would it draw the water off if I were to lay drain tiles in the bottom of these ditches, fill them up level, and cultivate over them?"—*Ans.*—If tiles are within easy reach and can be obtained on the place at a cost of about $40 per 1,000 feet—it will pay to use them—otherwise use hemlock boards four and three inches wide, nailed together as here shown, breaking joints. Put them in the dug out and deepened bottom of the ditches and fill them in.

Plowing with Three Horses.—Billings Hobart, of West Va., writes: "There are thousands of farmers that have never seen 3 horses work abreast in a left-hand plow, who would be much benefited if they knew the facts relating to the subject. Two 3-horse teams with two plowmen, can do as much work as three 2-horse teams—thus saving the labor of one man. By working a steady horse as leader, i. e., on the left, with a left-hand plow, he walks in the furrow, and guides the other horses by jockey sticks—little driving is required; do that little with a single line; a steady pull for 'haw,' two or three light jerks for 'gee.' It is usually best to back-furrow, beginning in the center of a land, turning 'haw.' A left-hand plow is in no sense an awkward tool. When the ground is hard and the weather hot, a 3-horse, or better, a 3-mule team can do a satisfactory day's work *when it is impracticable to run a 2-horse plow at all.* This, in preparing for wheat, will afford great relief in many cases. It is hard when work presses to stop the plow to wait for rain; all this and more has been expressed in the *American Agriculturist*, but it will bear occasional repetition—and it is especially valuable for the consideration of the owners of those teams that are compelled to drag a raw hand along in the slack of a line running to each horse."

Sumach.—G. H. Alford, Conn. The common species are the Smooth, the Staghorn, and the Mountain Sumachs. The leaves are considered equally valuable. They are collected when fully developed, usually in August, and if intended for market, are dried, ground, and bolted.

Petroleum for a Picket Fence.—"A. N.," Franklin, N. H., wishes to paint a picket fence with petroleum. He finds in market the "native oil," which sells at 50 cents per gallon, and "crude petroleum" that sells at 23 cents. It is the latter he should use. For hard wood, petroleum of a light specific gravity is best; but for pine and hemlock, and other soft woods that absorb the oil readily, a heavier petroleum may be more desirable. As to applying it, any way which gets it on with the least labor and in the largest quantity is best. We should go over the fence first with a whitewash brush, commencing on the top of the pickets, and letting the oil run down the wood. Then go over the fence again with a large, long-haired paint brush, and get on all the oil the wood will absorb.

Long Rows in the Garden.—Billings Hobart, West Va., writes: "Have found great economy of labor in laying out kitchen garden in long rows, about 2 to 2½ feet apart, putting a strip of potatoes at each end for a horse to turn on, and plowing everything; it saves three-fourths the labor, and produces finer vegetables. Those who think this arrangement don't work well, can apply the saved labor to ornamental grounds, and look at the whole result."—We have frequently advocated this method where land is plenty and labor dear, but it is not practicable in small gardens.

Cooking Peas in Milk.—"E. H. M.," Danbury, Conn., does not think Peas properly treated unless cooked as follows: "After shelling, rinse the peas, and place them in the pot with milk enough to boil them in, adding sufficient water—say one-quarter as much as milk—to prevent burning. Salt to the taste; stir occasionally while cooking to prevent the milk 'boiling over.' If a scum rises, which is not likely to occur if the milk is *new*, and cooked properly, skim off. When done, pour all into a deep dish, and add a generous lump of butter." Green Corn is also greatly improved by milk. The corn should be cut from the cob, and then cooked the same as peas. If it is desirable to eat with beans, the latter may be cooked in the usual way, and added to the corn after both are done. Milk requires less salt than water does.

The Value of Swamp Muck.—Muck differs in value, but when one has no choice, it is safe to act as if the material was of great value. The chief value lies in the organic matter, which contains more or less ammonia. In some 33 samples, Prof. Johnson found an average of 1¾ per cent, in the air-dried substance, which is more than double as much ammonia as is contained in very good barn-yard manure. Several peats contained 3 and one 3½ per cent. J. L. Faulkner, of Tioga Co., asks for "a simple formula for analyzing swamp muck." It would be impossible for a farmer without accurate chemical knowledge to do this, but an approximate estimate might be arrived at in regard to the ash and the amount of ammonia, thus: Dry some lumps as large as one's fist; burn them, see how much ash they leave, and its character—whether sandy and abundant, which is bad, or fine and little of it, which is good. When the lumps are burning, and as soon as they have done smoking and blazing, take out a coal of the size of a hen's egg or bigger, and hold near it a feather dipped in strong vinegar. The amount of white, cloudy smoke which curls about the feather, indicates the presence of ammonia, and thus when two or more samples are compared, the amount of ammonia may be guessed at. After all, the best test is the practical one; and generally, that peat, or muck is best, which decomposes and disappears quickest in the soil; and will probably show the most effect upon the crops.

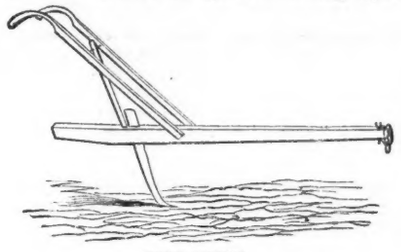
Spurrey.—J. M. McA., Summerville, Mich., writes: "I see Spurrey, Common and Giant, advertised in the Catalogues as a forage plant for cattle and sheep—What is it? Is it liable to become a nuisance on the farm? Is it worth cultivating? Would it do to plow under for

manure? and what is the season of sowing?"—Spurrey does well on sandy soils, in a warm moist climate—under such circumstances, sown in the spring, a heavy crop of forage or of green manure may be obtained. It does not at all stand well our hot, dry summers. They stop its growth almost immediately. Where it has been sown it is afterwards known as a road-side weed, but we believe it is never troublesome. It matures in three months or less, according to the richness of the soil and the climate. —The seeds are highly nutritious, and it may be fed to any kind of stock.

Sale of Mr. Sheldon's Farm.—We have received the following letter from Mr. Sheldon: GENEVA, N. Y., June 2, 1870. *My Dear Sir*,—In consequence of recent illness in my family, our physician advises us to travel for the next few years, and I have decided to offer my farm for sale. As you know all about it, you can well imagine the pain this decision has cost me, but my duty to my family seems imperative, and I must make the sacrifice. Very sincerely yours, JAMES O. SHELDON.——We deeply regret the necessity of this decision. We can ill afford to spare Mr. Sheldon from American agriculture. We need his example. We have always pointed to his career as a farmer and breeder with pride. We have admired his energy and "pluck." When he first "turned farmer" his city friends predicted that he would soon tire of it, and what is still harder to bear, his farmer neighbors seemed to have anticipated a similar result. And, as if to justify these disheartening opinions, he met at the commencement of his breeding career with many losses. Several of his most valued Shorthorn cows and calves died. His magnificent flock of South-Down sheep were kept in a separate barn in charge of a man who had a cow of his own in the building. One night the barn caught fire and the man ran to save his own cow and left the whole flock of South-Downs to perish in the flames. We presume Mr. S. owes his success to these losses. They did not discourage him. They were necessary, though a costly part of his agricultural education. They taught him care and caution, and with a due exercise of them, he seems to have had unbounded faith in himself and in improved breeding and farming. He has triumphed gloriously. When he purchased the farm it was remarkable for nothing, but the beauty of its situation, the grandeur of its trees, and the charm of the land scenery. The land, though naturally good, was poor and weedy. He drained it, cleared it, purchased large quantities of bran and other cattle food, made rich manure and applied it to his grass land until now he has one of the handsomest, richest, cleanest, and most productive farms in the State, with a large herd of cattle second to none in the world. It does seem as though we could not spare such a man. We can only hope that the farm will fall into the hands of some one who will still use it for rearing choice stock.

Perkins & House's Lamp.—A lamp for burning kerosene, made by Perkins & House, called the "Non-Explosive," has been used with much satisfaction by several persons connected with the office of the *Agriculturist*. The lamp is a metallic one and easily taken care of. The inventors claim, with good reason, that its construction renders explosion impossible. We attach but little importance to this, as oil which will explode should not be burned in any lamp. A large share of the accidents from unsafe oil do not occur from explosions within the lamp, but from carelessness in filling.—At all events, the lamp is a good one, vastly safer than any glass lamp, and when used with the best oil, gives a brilliant and pleasant light.

A Run-down Virginia Farm.—In "Walks and Talks" for June, some advice is given to one who has recently purchased an exhausted farm in Virginia. This has called out several letters, from one of which, by G. Child, we give the following extract: "First. Let him cut down the pines, and trim the brush off them, and put them in the gullies or washes—put the brush in first, and the poles or logs on top, to hold it down. Very soon, briars and grass will come up out of the bottom of the washes, and they and the brush will form a mass that will prevent more washing.....Second. To accumulate manure, let him hire a superannuated freedman—he can hire one for a little more than his board—and set him to piling up leaves and wood mold (that is, the top surface formed by rotting leaves), in his woodlands. When he has ten to twenty loads in a heap, throw dirt and rotten wood on it, to make it rot quick and thoroughly. If this is done in June, the manure will be fit to spread on the galled fields and plow in next fall for spring crops. It is the best cheap remedy I know of for exhausted clay lands. If his woodlands are all pine it won't do, as pine straw is of no account.....Third. To plow heavy bottom lands, set a sharp coulter in a beam, as in the engraving, and cut the sod into slices, the same width of the furrow of a two-horse plow. When you have gone around the land twice—that is, when you have cut off one slice, start the plow after the coulter, and turn the slice over, and the furrow, thus opened, will be a guide for the lead horse of the coulter to walk in, so that the man driving the coulter can cut his slice the same width every time. The coulter should go 10 to 12 inches in the ground, and it will take two horses to pull it if it is like the sod I had to deal with. The two-horse plow will find but little difficulty in turning over the slices after they are cut if it is a good Livingston or Clipper.....Fourth. Sheep are the best thing to kill briars, but they kill everything else first. Then sheep won't do in Virginia, as there is no tax on dogs, and every vagabond owns and starves from two to ten worthless curs. I was saved the expense of the sheep experiment by the experience of a neighbor who, out of sixty, only saved five sheep—and he didn't save them—he ate them, to save the dogs the trouble. He killed and poisoned about twenty dogs, and got the ill-will of his worthless neighbors. I hope the New England gentleman will find his investment profitable, and I know he will be astonished at the recuperative power of the red clay and limestone lands of Virginia."



TURF CUTTER.

Books Acknowledged.

Independent First Reader. By A. Madison Watson. A. S. Barnes & Co. 25 cents.

Tomato Raising in Common Gardens. By Horace Taylor, Canandaigua, N. Y. A pamphlet of 16 pages. It gives the method of starting the plants, training, trimming, etc., and is especially adapted to the northern latitudes, where the tomato needs much care, in order to ripen it successfully. The suggestions given for training will, if followed, increase the quality of the fruit.

The History of Hortense, Daughter of Josephine, Queen of Holland, and Mother of Napoleon III. By John S. C. Abbott. N. Y.: Harper & Brothers.

The Household Treasury. Philadelphia: Claxton, Remsen & Haffleffinger. This is a neat book, into which various household recipes may be copied, classified under their proper heads, and indexed. Each division has a neat vignette, and appropriate motto.

The Vicar of Bullhampton. By Anthony Trollope. N. Y.: Harper & Brothers.

Missouri Agricultural Report for 1869. We have received from Mr. C. W. Murtfeldt, Secretary, the report of the Missouri State Board of Agriculture, which, besides the Secretary's report, contains essays, proceedings of societies, and the valuable report of the State Entomologist.

The American Tune Book. Boston: Oliver Ditson & Co. A collection of sacred music by five hundred editors. $1.50.

The Life of Bismarck. By John George Louis Hesekiel. Translated by Kenneth R. H. McKenzie. New York: Harper & Brothers.

Memoir of the Rev. John Scudder, M. D., Thirty-six years a Missionary in India. By Rev. J. B. Waterbury, D. D. New York: Harper & Brothers.

Conjugal Sins against the Laws of Life and Health. By A. K. Gardner, M. D. New York: J. S. Redfield.

Scuppernong Grape.—"Novice," Scott Co., Iowa. It will be of no more use for you to try to grow this grape than it would be to undertake to raise pineapples.

Conover's Colossal.—Mr. Abram Van Sicklen, of Jamaica, L. I., sent us a bunch of Conover's Colossal Asparagus, which contained twenty-five stalks and weighed six pounds.

Painting a Tree.—We published the desperate remedy, applied for bark louse, by Mr. D. A. Norris, of Greenville, Ct., and thinking his success was an exceptional one, remarked that we did not commend the practice. Mr. N. writes: "I will only say that the tree I painted, two years ago, has made a growth of four feet and three inches, with a diameter of three-fourths of an inch at the but; and it blossomed and set so full this spring that, unless at least three-fourths of the fruit drop off, I shall be obliged to thin it. Now, if any one can best that in two years, on a sick tree, I should like to see the tree. Mine was a desperate case. I tried painting as a desperate experiment. I succeeded beyond my expectations. I know of no healthier looking nor thriftier tree than the one I painted, and I don't think any man can find a louse on it. I found some lice on another tree last year, and I painted that, and it is doing as well as the first one. I am perfectly satisfied with the experiment. That it has proved a success with me is acknowledged by all that have seen the trees."

The Handy-Book of Husbandry. By George E. Waring, Jr., of Ogden Farm, Draining Engineer, etc. New York: E. B. Treat & Co. Sold by subscription, at $3.50. As a rule, we have not noticed those agricultural works which are sold by subscription, for two reasons: 1st, the works sold as this is have generally been the merest trash, made to sell in this way by writers whose productions would never meet with a sale in the regular trade. 2d, the few subscription books that we have noticed have brought us numerous letters asking where they could be had, information which we were unable to give. In the present work both these objections are avoided. The book is a good one, and arrangements have been made by which such of our readers as choose to do so, may obtain it. Those who have read the "Ogden Farm Papers" do not need to be told that Col. Waring is a pleasant writer, as well as a thorough-going, practical farmer. In the present work he gives an outline of farm operations, commencing with buying or leasing a farm, and discussing farm building, drainage, manure, implements, animals, etc., and all in a clear and practical manner. A considerable space is given to the steam plow, as the author foresees that the time is soon at hand when a method of preparing the soil, so common in England, must be adopted here, where practicable. A very full set of useful tables adds much to the value of the work. The book is produced in good style, and we take pleasure in commending both its exterior and its contents as a marked exception to the agricultural works sold by subscription that have fallen under our notice.

Seventy-five Popular Flowers, and How to Cultivate Them. By Edward Sprague Rand, Jr. Boston: J. E. Tilton & Co. This work is mainly made up of articles which have appeared in Tilton's Journal, and which have been thought worthy of preservation in a book form. The author, in his preface, claims indulgence, or we should be disposed to criticise the carelessness which marks the botanical portions of the work. For the rest it is a clever guide to the cultivation of some of our most popular flowers.

Five Thousand a Year, and how I made it in Five Years' Time, Starting without Capital.—By Edward Mitchell, Loring, Boston. Books like this do an incalculable amount of mischief, as they present gardening operations in a way that no practical man ever found them, and lead men who have no knowledge of the subject into investments and enterprises which are very sure to end in disaster. We hope that this Mr. or Mrs. Gilman-Barnard-Mitchell will soon exhaust the subject, and "let us have peace."

In Stacking Hay or Grain, keep the middle of the stack very full all the time and thoroughly trodden down, so that the sides will settle more than the middle. Put some straw or long hay on the roof, and rake it down smooth. And do not be ashamed to put some poles on each side of the stack to keep it from settling to one side.

Agricultural and Horticultural Fairs for 1870.

We shall, as usual, prepare a list of Fairs, with the time and place they are to be held, and desire to have it as complete as possible. We will thank Secretaries and other officers of Societies to send us copies of Premium Lists or newspaper notices, announcing the time of the Fairs—or to write to us, giving the name of the Society or Club, the State, with the place where, and when the fair is to be, adding also the name of the Secretary or business manager. Our list of fairs to be held in July and August so far is quite a small one.

The Minnesota State Horticultural Society holds a fair at Minneapolis, in connection with the Hennepin Co. Horticultural Society, July 4th. There is to be a

Horse Show at Ellicottville, N. Y., July 4th and 5th.

The Carolina Horticultural Society makes a show at Wilmington, N. C., Aug. 11th, and in

Parks Co., Ind., there will be a fair at Bloomingdale, Aug. 24th to 26th, and one at Bridgeton 29th to Sept. 3d,

A House Costing $1,300 to $1,900.

In accordance with our previous purpose, as well as in response to a great number of requests, we present well studied plans for a low-priced house. These were drawn by Mr. S. B. Reed, Architect and builder at West Flushing, L. I., with several modifications suggested by Mr. Judd, who will, by way of practically testing them, erect a couple of these houses in Flushing during this summer. We give the wide range of $600, for the cost of the same house. Where materials and labor are comparatively cheap, and little attention is given to ornament, inside or out, a house of this plan and size may be erected for $1,200 to $1,400. With labor and materials at the prices named below, the cost, exclusive of land, would run all the way from $1,300 to $1,900, or even more—according as one, or more, or all of the following things be provided. (1) Superior brick cellar wall, 7 to 8 feet high.—(2) The hall and one *cellar* finished off with floor, lathing and plastering the walls and ceilings.—(3) Use of the best "Novelty" siding, of good pine 10-inch boards, 1 inch thick, with groove in the center of each board, the same as shown in fig. 6, page 89 of our March number.—(4) More brackets on the cornice, and dentals added; and heavier, more ornamental window caps, than are shown in the engravings.—(5) Fine moldings in the lower rooms, and some fair moldings, instead of plain casings, in the second story.—(6) Thick plaster with fine hard finish and heavy cornice moldings, and center pieces in the ceilings, in the first story.—(7) All the walls filled in with brick and mortar, or back plastered, that is, put lath and plaster midway between the siding and

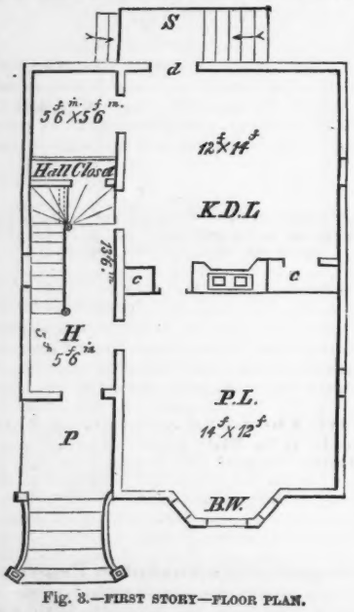


Fig. 3.—FIRST STORY—FLOOR PLAN.

inside lath and plastering.—(8) Water Tank over the hall stairs in the upper story.—(9) Range with water-back and upper boiler in *K D L*, fig. 3.—(10) Stationary Wash Tubs.—(11) Best quality of locks, with white porcelain knobs and plated shanks on all doors.—The addition of all these, or part of them, will add to the cost. After careful estimates of every part, in accordance with the below named prices, Mr. Judd is arranging to put up two houses in fair, comfortable style and convenience, stopping at just about $1,500 for the total cost, exclusive of land, but including cistern, fencing, privy, and, perhaps, a grape arbor. The 10-inch cellar wall will be of brick, with an air-space in the middle. The cellar to be built so as to be conveniently finished off if ever desired; Novelty siding; tin roof; moldings and cornice in first story, with center pieces; hard finished walls, etc., etc.—In short, a neat house, but without the extras. As will be seen, further on, the plan of the house, small as it is, admits of modifications, easily made, that will fit it for the wants of a large family. This is a noteworthy feature of this house. Put up cheaply at first, it can be extended at trifling expense and with very little "tearing up." The above-ground position of the basement renders the rooms in this quite light and cheerful.

Description.—Fig. 1 shows the **Front Elevation.** This gives a general view. The basement should be more above ground. As formerly explained, we believe in setting the first floor well up, so that the occupants shall always be as far above the ground as may be. For a basement 7 feet high, 2 to 2½ feet in the ground is deep enough, and 4½ to 5 feet above the ground—except in very cold regions where it is necessary to bank up the entire walls to keep frost out. A 10-inch wall, built hollow, or with air-space, will withstand pretty severe cold weather. The whole roof should be a few inches higher

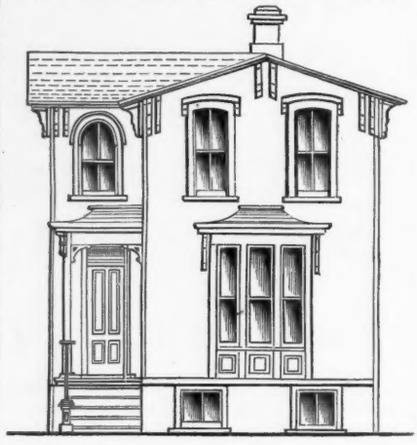


Fig. 1.—FRONT ELEVATION.

than shown, so as not to appear so close to the upper windows. The cornice should be a little heavier than shown. Make the brackets a little shorter and broader. It adds greatly to the good appearance of a house of this kind, to have the roof project at least 20 inches all around. The cost is but little more. We have seen many, otherwise fine, dwellings deprived of all beauty by "sticking on" a very narrow and light cornice.

Fig. 2—Cellar or Basement.—(7 feet high in the clear.) The plan shows a division that may be made; but when great economy is studied these interior divisions may be omitted—until wanted. One or more chimney flues should start in the cellar for stove pipes there, if ever needed. An outside door and steps are shown at *C*. If the future wants and circumstances of the family require, *B* may be finished off for a Kitchen, with a dumb-waiter through the floor. *A*, may be fitted up as a Dining-room. In this case a small Cellar might be excavated under the piazza. We believe Mr. Judd intends to make the Cellar of the full size, piazza included. It will be seen that no more wall, and but little more digging, will be required. The girder will need supporting with locust posts, or brick piers, if the cellar division be not made at first.

Fig. 3—First Story.—(9 feet high in the clear.) The general arrangement is shown by the engraving. The piazza, *P*, may be lessened, if desired, and more room thrown into the hall, *H*, and into the room *I*, in fig. 4. The parlor, (*PL*), used somewhat as a living or sitting room, is of convenient size. A mantle-piece may or may not be added. An economical arrangement is to lead the stove pipe from *KDL*, through the wall into a drum in *PL*, and then turn it back into the chimney. This will keep the front room warm. The drum should have a small fire chamber in it for using wood during some of the coldest days. The closets or pantries, *cc*, should be made pretty deep to give plenty of room in them.—*KDL* is used for a kitchen, a dining-room, and partly as a living room. The back stoop, *S*, may be a simple

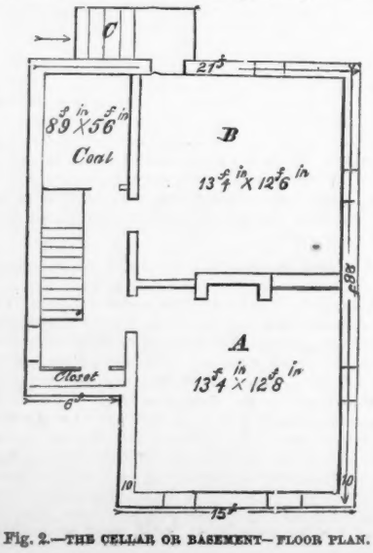


Fig. 2.—THE CELLAR OR BASEMENT—FLOOR PLAN.

platform with railing, or be covered in. *H*, may be lighted by a sash over the front door, and partly from the window over the open stairway in the second story. The window against the stairs at the left of *H* may be simply a blind one for the good appearance of the outside. A Pantry, 5½ feet square, is provided at the rear of the hall. The stairs to the cellar are in the hall *H*, under the other stairs. They should be wide enough for convenient descent to *A*, if that should ever be used as a Dining-room.

Fig. 4.—Second Story.—(8 feet high in the clear.) It will be seen that there are four sleeping rooms, *F*, *R*, *S*, and *I*, all large enough for a full-sized bed, except *I*, which will take in a ¾ bed. *F* and *R* may be heated by stoves, the pipes entering the chimney flues. *I*, may have a door also into *F*, if it is desired for a young or sick child.—By having the door into the hall, *I*, may be kept as a "spare room," if the family require the other three sleeping rooms. We have slept comfortably in a "spare room," no larger than this, in many pretty well-to-do farmers' dwellings. Or *R*, or *S*, may either of them be used as the spare room. We don't believe in the frequent practice of living or sleeping *constantly* in a small room, and reserving the largest and best room for *occasional* visitors. That is sacrificing comfort and health to show. If friends, stopping for a night, or a few nights, cannot put up with such rooms and conveniences as may be readily furnished, their friendship is not worth a great deal. [And in this connection we will throw in our standing protest against the custom of giving up one's whole time to worry and excitement over getting up extra fine food for visitors—just as if *they* had no such things at home, and had come away to find "something good to eat." If *we* go to see our friends, it is to visit with *them*, and not with their larder. We do not want a hasty occasional word with them, while they are flying about to

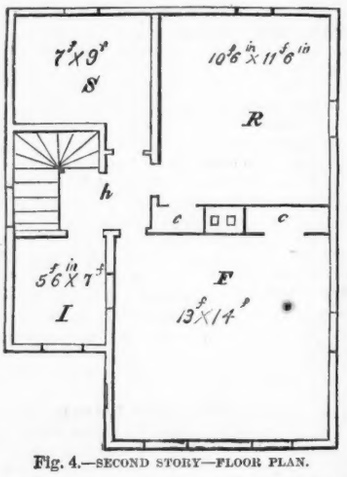


Fig. 4.—SECOND STORY—FLOOR PLAN.

feast our appetites. We prefer they should cook less than usual—give us plain, simple food, enough to satisfy the natural demands—and give us some of their *time* and attention for visiting. The venerable Bishop Hedding once called upon a good lady of our acquaintance awhile before noon. She was all excited, because no good preparations were made for dinner. "Sister," said he, "I have but three hours to stay, and I want to visit with you and your husband. You have good bread and milk; let us eat that, and *all* have the rest of the time to talk together"—and it was done. The writer happened to be one of the quartette, and we had a "feast of reason and flow of soul," such as a fashionable hotel table seldom supplies. The same principle applies to the general household arrangements for entertaining guests, especially where the house is small and means limited.]

Mr. Judd has another plan nearly perfected, for a house costing from $2,000 to $3,000, exclusive of land, which he is preparing to build the present season. It is designed to contain many conveniences, plumbing, etc. The plans of this will be described next month, probably.

Prices.—The following prices are used as the basis of calculation the present summer, here. The variations under the same items, refer to quality. Thus, while the best carpenters may receive $3 or more, per day, others less experienced, and less expert, will be dearer at $2 a day. There must be always some apprentices learning, at low wages, while they can do some kinds of work as well as full men. The same remark applies to other workmen.—*Wages* per day of 10 hours: Carpenters, $2.00@3.50; Masons, $3.50@$4.00; Laborers, $1.50@$1.75; Painters, $2.50@$3.50; Grainers, $4.00@$5.00; Roofers, $3.00@$4.00; Slaters, $3.50@$4.50.—Timber and Lumber per 1000 feet board measure: Timber, (beams, posts, etc.) $22.50; Siding, planed, $34@$40; Flooring, $32@$36; Joists, $18@$20; Clear Pine, $50@$55; Hemlock Boards,

$16@$20; Lath per 100, 28c.@33c.; Doors, 7x2½ ft.x1¼ inches, $2.50@$3.00; Doors, 7×2½ft.×1¼ inches, molded on both sides, $3.50@$4.00.—Hardware: Nails, $4.50@$4.75 per 100 lbs.; Ventilators, $1.10@$1.60; Porcelain knobs with plated shanks, per doz. $4.50@$5.00; Porcelain knobs, japanned shanks, per doz. $1.75@$2.00; Locks, per doz. $4@$6.00; Tin for roofing, etc., good charcoal, per 100 feet, $8.50@$9.50; Slating, good, laid with double felting, per 100 feet, $12.50@$13.50. Gas piping per foot, put in, 14c. Brick, per 1,000, hard, $7@$8; soft, $6.50@$7. Lath and Plastering per yard, two-coat work, 30c.@35c.; do., hard finish, 40c.@50c. Blinds per foot, (unpainted), 37½c.@40c. Sash, (glazed, 2d quality French glass, and primed), $3.50@$4 for above houses. Sash weights per 100 lbs., $2.75@$3. Sash cord per lb., best, 30c.@35c. We intend to give a talk on the kinds, qualities, etc., of the above articles, with hints on selection, or best kinds to use.

Scattered Grain on Stubbles.—Notwithstanding the excellence of our steel-toothed rakes there is considerable scattered grain and heads left on our wheat, barley, and oat stubbles. The former is usually seeded down with clover, and as there is no necessity for plowing them, the wheat stubbles may be reserved until the last. But where barley or oat stubbles are to be sown with wheat, we can better afford to lose the scattered grain than to postpone working the land. Sheep will glean the stubbles as well as pigs, but they should not, at first, be allowed to remain in the field more than half an hour the first day and perhaps an hour the second, lengthening the time as they have to travel farther in search of the grain. And see to it that the sheep have free access to water, and are regularly salted.

Trout Breeding.—About the first of June we had the pleasure of visiting the trout ponds and breeding race of Mr. William H. Furman, of Maspeth, Queens County, Long Island, to witness the results of some novel and valuable experiments in raising trout. Mr. Furman practised for several years the "artificial method" of obtaining eggs from trout, fertilizing them, and hatching them under daily inspection and more or less handling. This was so essentially *artificial* and so repugnant to his feelings, that for several years he has devoted time and money in conducting experiments with a view to have the eggs laid and hatched in a perfectly natural way, and at the same time to obtain the highest good results as to the health of the fry and the number hatched. He has put in use a race with a floor of slats; and upon the slats a layer of gravel of the size preferred by the fish for spawning ground. The water is admitted from a powerful spring "piped" to the spot, (and from other springs in the bottom,) beneath the floor of slats, and wells up with great uniformity through the entire mass of gravel, so that everywhere there is an upward rising, yet very gentle, current. This race is 290 feet in length, varying from 4 to 8 feet in width; the water standing from 12 to 18 inches deep over the gravel, and having a very perceptible flow at the outlet where the race is widest. Below the race is the nursery, a low building, 100 feet in length by 10 in width, made of rough boards, and entirely occupied by the water-course and a narrow walk. From the nursery the water flows through "the brook," a boarded, roofed, and gravelled channel, 500 feet long, to its outlet into the main pond. This is a beautiful sheet of the purest water, long and narrow, doubling upon itself, and filled with breeding trout, some of which are of very large size. The parent trout seek the race of their own accord and make hardly any nests in this beautifully clean and well-prepared bed, but lay indiscriminately anywhere. The eggs disappear among the gravel, and are not touched. The old fish return to the pond, and, after the laying season, are shut off. This spring, after the hatchlings could take care of themselves pretty well, the gravel was all overhauled to look for dead eggs, etc, and it was found so clean and so few dead eggs were there, that Mr. F. says he shall not disturb the bed another year. The race is roofed its entire length, the roof being movable, and not entirely excluding the light. It is located near salt marshes, and, occasionally, eels are seen on wet nights following up surface ditches in close proximity to the race; hence, in order to exclude these and anything else that might harm the fry, wire screens are nailed across the sections of the race at exposed points. The feeding of the fry takes place at certain spots in the race, and here the largest quantity of excrement accumulates. The upward flowing water makes it easy to collect and remove this, but the fry are chiefly fed in the nursery. The number of fry this year exceeded the capacity of the race and feeding-house; and so previous to our visit Mr. F. had opened the connections with the main pond and let the fry go freely out and in. This had somewhat reduced their numbers, but the majority still kept near the feeding places, and wherever we looked the water seemed alive with them. Mr. F. is fortunate in being able to obtain the roe of the horsefoot, or king-crab, in abundance, and an unlimited supply of beautiful, fat maggots of the flesh-fly. Many of this year's fry were over 3 inches, and some, we judge, 4 inches in length, and had a remarkably lively, healthy look. We saw very few dead ones. This race is patented; but as we deem it desirable that several should be in operation, Mr. F. authorizes us to say he will make very liberal terms to those who will put them up in time for use this year. The fish begin to enter the race about October 1st. We cannot but regard Mr. Furman's results as exceedingly important and successful. He simply protects eggs, laid in a natural way, from all natural enemies; at least that is the aim. This plan differs from the Ainsworth race inasmuch as that involves a removal of the eggs, which fall though the coarse gravel and wire screen upon a set of movable screens below, and are subject to more or less manipulation and other than natural surroundings during the hatching period.

Bee Notes.—*By M. Quinby.*

The Apiary in July.—Boxes should never remain on after they are full. The bees soon soil the combs, and it is more important that the comb should be clean, than that every cell next to the glass should be sealed up. If there are more boxes on a hive than will be likely to be finished, remove some or all, if you can, to stronger stocks to be completed. It may be necessary to change them from hive to hive several times. One finished box is worth two unfinished ones. Never let bees lie outside of the hive for want of room in the boxes. Put on a second tier of boxes if the strength of the stock will warrant it, by making holes in the top of the lower ones; those partly full may be raised, and empty ones put under. This, perhaps, is the best way. In movable comb-hives, when all the boxes the hive will accommodate have been put on and there are bees still unemployed, take out some full combs—alternate combs, if more than one are to be removed—and put empty ones in their places. Full combs with brood may be given to weak stocks—having brushed off the bees, of course. In this way stocks may be made strong and valuable, which would otherwise be worthless. Stocks often overswarm and become too weak to protect the combs. If they cannot be strengthened, break up the hives and secure the honey and wax before the worms destroy them and a swarm of moths is bred. If queens are not raised artificially, it is well to hive a small swarm or two, and thus keep queens for supplying those that become destitute. Flags do not prove to be as good a material for hives as straw. Secure straw now from the harvest field. Select by handfuls, make even, shake out short ones, cut off heads, and put away to make hives with on some rainy day in December.

About Queens.—B. F. Rosenberry, Alliance, Ohio, writes: "On the 8th of April a small swarm of bees issued from one of my colonies, flew around awhile and went back again. Seven days after, they swarmed again, and we hived them in a hive with a few frames and some honey. They are doing well and breeding, both the old and new. Where were the two queens all winter? as a new queen could not have been raised as early as the 15th of April."—It is not at all strange to have new queens as early as the middle of April, (I have known them hatched in midwinter,) and allowing this, it is not difficult to answer his question. As queens grow old, they frequently become feeble, barren, or lay only drone eggs, and it is common for the bees to prepare queen cells to supersede them, and in such cases the young queen usually destroys the old one. I should infer that in this instance there was an intention to supersede the old queen, but she was yet strong enough to resent it and led out the first issue; but she being lost, the bees returned to the hive. When the young queens began to hatch, another swarm issued as in the swarming season, and if the old queen had become a drone-layer, there would be drones to secure the fertilization of the new queens thus early in the season.

Ants and Bees.—D. S. Landis, Litiz, Pa., writes for advice as to the best method of keeping ants and worms away from beehives. The prevalent idea is that these are often the *cause* of weakness and thriftlessness in a colony, whereas they will only be found in a hive when it is already weakened from other causes. Keep your colonies in *good condition*, and there will never be room inside a hive for a strong family of bees and a nest of ants, or a brood of worms. Ants will sometimes gather on the top or near a strong hive for the sake of warmth they find there, but not within it. Ants and vermin generally will disturb a hive of bees only when it is too weak to repel them; just as debility of the human system renders it defenceless against the attacks of acute diseases, which a strong constitution would resist successfully.

SPECIAL TO EDITORS

OF OUR

EXCHANGES.

This paper has several valuable articles, one of which has been prepared with special care and labor, and is of great importance. We refer to the chapter on "*Poisons and their Antidotes*," on page 250. A great number of cases of accidental poisoning are constantly occurring—almost every family has had one or more—though few except fatal cases are made public. This article gives the Poison in prominent type, and places right against it the best remedies likely to be at hand in ordinary households. The article should be extensively copied, so as to get it into every family. Though copy-righted, this, like all other articles, is at the free service of the press, with the simple condition that credit be given to this journal in its full name.

A careful examination will reveal very valuable features in the "Small House" plan on page 248. One of its merits is the facility with which it can be enlarged with trifling expense, as the occupying family increases in size and means. There are forty millions of people in our country needing a shelter of some kind, and the great mass of those who have houses at all, want one not exceeding in cost the one here described. It will be noticed that in the current volume of the *American Agriculturist*, special attention is being given to plans for convenient houses of different values. Mr. Judd is erecting a variety of these houses for the sole purpose of studying this subject, and practically testing plans for the use of the readers of this journal.

It is hardly necessary to call the attention of our editorial friends to the many other valuable articles—such practical chapters as Walks and Talks on the Farm, Ogden Farm Papers, Horse Papers, and the other agricultural and horticultural articles, all prepared by practical men who speak from thorough, practical knowledge; the Household and Children's Departments—the latter enriched by the contributions of "Carleton." Below we give a brief epitome for those who are disposed to give the usual notice of publications of this kind.

Another Very Valuable Paper will be found in the *American Agriculturist* for July 1st. The chapter on Poisons and their Antidotes, in which over 60 different poisons are each accompanied by a remedy to be found in most households, is the most complete thing of the kind ever published, and it should be procured and kept at hand in every family, since cases of accidental poisoning not unfrequently occur in even the most careful, well-regulated families.——Full plans with illustrations for a cheap, convenient, and very complete Dwelling House, are given in this number. More than a hundred articles and items, with above forty pleasing and instructive engravings, furnishing plain, practical, useful information and reading for the Farm, the Garden, the Housekeeper, and the little folks—in City, Village, and Country—fill up the ample reading pages of this excellent paper. "Carleton" gives an interesting talk to the Boys and Girls about what he saw in China, with illustrations. The terms are only $1.50 per year, or 15 cts. per number, post-paid, and we notice that the paper is offered from July 1st to the end of this year for only 60 cents, to afford new subscribers an opportunity to get acquainted with its merits. Orange Judd & Co., Publishers, 245 Broadway, New York.

Gerhard's Farmer-Zeitung, a valuable German Periodical, has been merged into the *Amerikanischer Agriculturist*, the German edition of the *American Agriculturist* of New York. This is the tenth paper that has transferred itself into the subscription list of the latter paper, during as many years past—which may, in part, account for the enormous circulation it has both of the English and the German editions.

Poisons and their Antidotes.

BY OUR FAMILY PHYSICIAN.

[Even with the greatest carefulness, accidental poisoning will often occur. Children are much inclined to try bottles and parcels, before they are able to read the labels. Nearly every poison has its antidote, which will prove effective *if used at once;* loss of life often results from a delay of but a minute or two. A recent case of accidental poisoning, under our own observation, where a knowledge of chemistry, applied on the instant, averted much suffering, if not death itself, suggested the preparation of an article on this subject for the *American Agriculturist.* which should place against each poison some remedy available in almost every household, and Dr. M. R. Vedder, of Flushing, N. Y., has kindly prepared the following, and we have revised and arranged it with much care. Let it be carefully preserved where it can always be instantly referred to. Note well the closing remarks.]

Arsenic. **Fly Powder,** (" Cobalt.") **King's Yellow.** **Scheele's Green.** **Ratsbane.**	Stir 2 tablespoonfuls of ground **Mustard** in a quart of **lukewarm water,** and drink until copious vomiting is produced, tickling the throat with the finger or a feather. After vomiting, give large quantities of Calcined Magnesia.
LEAD POISONS. **Sugar of Lead.** **White Lead.** **Litharge.**	First, **Mustard** to vomit, as above, and doses of **Epsom Salts,** say a teaspoonful to a tablespoonful, according to the age of the patient, every half-hour for two hours.
MERCURIAL POISONS. **Corrosive Sublimate,** or (Bed-Bug Poison.) **White Precipitate** **Red Precipitate.** **Vermilion.**	**White of Eggs**—or Milk, or Wheat Flour—beaten up.—Administer all that can be got down in ten minutes, and then give mustard emetic as above.
COPPER POISONS. **Blue Vitriol.** **Verdigris.** **Food or Pickles Cooked in Copper or Brass Vessels.**	**White of Eggs,** or Milk taken very freely for ten minutes, to be followed with an emetic of Mustard as above.
IRON POISONS. **Copperas,** or **Green Vitriol.**	**Cooking Soda,** a teaspoonful to a tablespoonful, or more—according to age of patient, etc. — followed by plenty of Gum-Arabic water, or Flaxseed tea or Slippery-Elm tea.
ANTIMONY. **Tartar Emetic.**	**Powdered Nutgalls,** a teaspoonful or more in water; or tea of Oak bark or Peruvian bark. Give promptly.
SILVER. **Lunar Caustic.**	**Table Salt,** 2 teaspoonfuls or more, in a pint of water.
ZINC. **White Vitriol.**	**Warm water** to *relieve* vomiting; and 1 to 2 teaspoonfuls of **Baking Soda,** followed by Milk or White of Eggs.
PHOSPHORUS. **Matches.** **Rat Exterminator.**	**Mustard** and **Warm Water** to cause vomiting; then large draughts of water containing **Calcined Magnesia,** 2 tablespoonfuls to a pint, followed with **Flaxseed tea,** or Slippery-Elm tea.
ACIDS. **Acetic Acid.** **Citric Acid.** **Muriatic Acid.** **Tartaric Acid.**	**Baking Soda, or Saleratus, Lime,** or **Magnesia,** (a teaspoonful to a tablespoonful) dissolved in water and used freely. Powdered lime mortar from ceiling will do.
Oxalic Acid. **Nitric Acid.**	**Magnesia or White Chalk** or **Lime** stirred in water, drank freely and *quickly.*
Sulphuric Acid, (Oil of Vitriol.)	Drink much water quickly, and follow immediately with large doses of **Magnesia,** or Powdered White Chalk or Lime; or if these are not at hand, use Soda, or dissolved Soap. Follow with plenty of Flaxseed or Slippery-Elm tea.*
Prussic Acid. **Oil of Bitter Almonds.** **Laurel Water.**	Teaspoonful of **Hartshorn,** (aqua ammonia), in a pint of water. Drink the whole at once.
ALKALIES. **Pearlash.** **Salts of Tartar.** **Soap Lye.**	Drink freely of **Vinegar** in water, followed with Gum-Arabic dissolved in water, or Slippery-Elm tea, or Flaxseed tea.
Ammonia. **Hartshorn.** **Potash.** **Much Soda.**	Drink freely of **Vinegar** in water, or Lemon Juice, or Citric, or Tartaric Acid mixed with water. Sweet Oil, Castor Oil, Linseed Oil, or Cream, is also good, and should follow the other remedies above named—a tablespoonful first, and then a teaspoonful an hour for three hours.
ALCOHOL. **Any Spirituous Liquor.**	Two tablespoonfuls of **Mustard** in a quart of warm water. Drink till patient vomits freely, using a finger, or feather.
VOLATILE OILS. **Creasote.** **Carbolic Acid.** **Oil of Tar.** **Oil of Turpentine.** **Oil of Tobacco.** **Fusel-Oil.**	**White of Eggs,** or Milk, in quantity, followed quickly by a Mustard emetic.
MISCELLANEOUS. **Charcoal Fumes.** **Street Gas.**	**Fresh Air,** and artificial respiration.
Iodine.	**Starch,** or Wheat Flour beat up in water. Vomit with mustard and warm water.
Saltpetre. **Nitrate of Soda.**	**Mustard Emetic,** followed with Oil as for Ammonia.
VEGETABLE POISONS. **Strychnine.** **Nux-vomica.** **Opium.** **Laudanum.** **Paregoric.** **Morphine.** **Stramonium,** (or Thorn Apple, or Stink Weed). **Belladonna,** (or Deadly Night Shade.) **Croton Oil.** **Foxglove.** **Squirting Cucumber.** **Aconite,** (Monkshood) **Hemlock.** **Hyoscyamus or Henbane.**	**Emetic of Mustard** and warm water, as above; drink till patient vomits freely.—Tickle the throat with finger or a feather; or give a teaspoonful of powdered alum; or five grains of tartar emetic; or 20 grains (half a thimbleful,) of white vitriol, dissolved in half a tumbler of warm water, every ten minutes, till vomiting is produced. If the patient is drowsy, give the strongest cold coffee, or slap smartly on the back, and walk, or use electricity to keep him awake.
Arnica.	**Vinegar** and water.
Mushrooms.	**Emetic of Mustard** and warm water, until vomiting is produced; then frequent small doses of Epsom Salts.
Poisonous Fish.	**Emetic of Mustard** and warm water, tickling the throat.
BITES, ETC. **Serpents.** **Insects.** **Mad Dog.** **Poisoned wounds from Dead Animals.**	Tie a **String tightly above the Wound;** some one having no sores, broken skin, or exposed nerves in the mouth, suck out the blood, and wash with hot water, so as to make it bleed as much as possible; then wash with hartshorn, and burn out with a large red-hot wire or pointed Lunar Caustic; after this remove the string, & poultice with flaxseed.

We have endeavored to give those antidotes which are most likely to be at hand in every family, and can be readily administered by any one, but in all cases of poisoning, send for the family physician at once. It may be necessary to use the stomach-pump. The after treatment, to prevent or subdue inflammation, should be followed out with great care.

In poisoning by Arsenic, the *hydrated peroxide of iron* is an invaluable antidote, but as a physician would be required to administer this antidote, we have omitted it.

* [We have taken the liberty to change the usual directions for "Oil of Vitriol," which say, "use as little water or other liquids as possible." We should drink water very freely at once, to dilute the acid as much as possible. The heat produced by uniting sulphuric acid with water, will occur in any case, by the natural fluids in the stomach. No more heat will be produced by the large quantity of water, but the heat will be so diffused in the larger amount as to destroy its effects.—O. J.]

Trapping the Curculio.—Mr. Wm. B. Ransom, of St. Joseph, Mich, was so successful in trapping the curculio that he made his method known, and the local paper at once issued an Extra which was sent abroad in order to allow a trial of the plan the present season. The method is to level the soil around each tree and make it perfectly smooth for a distance of 2½ feet from the trunk, leaving no place in which a curculio can hide. Pieces of bark, shingle, or other material, that will serve as a shelter for the insect, are laid upon the ground close to the tree. The curculio will conceal itself under these and is caught and destroyed. The chips are turned over every day, and the insects killed. Dr. Hull, of Alton, Ill., of "curculio-catcher" fame, visited Mr. Ransom and spent several days in examining his operation. He gives an account of his observations in the Prairie Farmer. Though at first inclined to think Mr. Ransom's traps a complete success, Dr. H. found that, as the weather became warmer, fewer insects were caught under them, and upon examining the trees, enough curculios were found upon them to destroy the crop of fruit. It appears that this plan is not likely to supersede that of jarring the trees and catching the insects upon sheets or upon a "curculio-catcher," and how far it may prove an auxiliary has yet to be determined. At all events, Mr. Ransom deserves great credit for the promptness with which he made known a method which promised to be useful to fruit-growers.

Horse Papers for Farmers.—No. 6.

"A good master is half the horse." It is of no use to raise good colts if they are not to be so treated as to become, and to remain, good horses. The domesticated horse is a highly artificial production. By taking advantage of certain natural tendencies in the race, man has (during long centuries) so changed the original form and character of the animal as to produce large size, great beauty, docility, strength, endurance, economical assimilation of food, and ability and willingness to perform severe labor.

The same power that built up must be employed to maintain. A herd of the best thorough-breds turned loose in an uninhabited country, would, in a few generations, lose size, shape, strength, docility, and nearly all valuable qualities. The rapidity of the degeneration would depend on the abundance of the natural food, the constancy of its supply, and the vigor of the climate. There is a constant antagonism between the natural tendency to deteriorate under neglect, and the tendency to improve under artificial management. In proportion as we follow the practice that long experience has shown to conduce to improvement, shall we increase—or at least continue—the more valuable qualities. In proportion as we allow nature to have unguided sway, shall we permit these to be lost. Simple abundance of food at all seasons will be very much in our favor, but this is, by no means, all that is necessary. We must see to it that the abundant food is administered with regularity; that it is the right kind of food; that pure drinking water be regularly supplied; that the atmosphere in which the horse lives is wholesome; that he be not subjected to too great exposure to the inclemency of the weather; and that he have sufficient and regular exercise. Young colts, during their second, third, and fourth summers, cannot be better provided for than by being placed on dry pasture, where the grass is

good, and where the water is plenty and wholesome. They should not, however, be left out at night until settled warm weather, nor should they be allowed to depend entirely on the grass after it has been much frozen in the fall. The fresh air and water, and the nutritious grass, coupled with the free life of the field, will supply all the conditions for the best growth and development during the early summers of the animal's life.

In the winter time, it is absolutely necessary to satisfactory development that the best hay and good water be supplied, and that sufficient opportunity for exercise be given. Extra food and extra care will pay, in the long run.

Now, bearing in mind the foregoing statements and the principles laid down in the previous papers of this series, let us see how the average farmer manages his horse breeding affairs. He buys (if he does not already own) a half-broken-down mare, with, perhaps, foundered feet, spavined hocks, and "touched" wind; and then he blunders about the country to find a cheap stallion. If there is a fine blooded horse standing at $50, and a "lunkhead" at $5, he always begins by saving $45, and congratulating himself on his shrewdness. After the mare is stinted he puts her at work in the team and makes her "earn her living" by working hard, ten hours a day, and picking up most of her feed at night from a poor pasture. In winter she generally has hay given her in the most wasteful way, and is kept in a dark and unventilated stable, unless the owner believes in "hardening." In this case she may spend most of the time,—wet or dry, warm or cold,—in an exposed yard with a sheep rack or a stack to feed from. If there is a more active horse on the place it is used, because pleasanter to drive, for the daily trip to the store or to town; and the old mare mopes away her time in idleness. In the spring she is, fortunately, set at work,—fortunately, because hard work is better than no exercise,—and is kept at it, without extra feed, until she foals. Then, after a few days, she is geared up again; and on her long jaunts to town, as well as about her farm work, the youngster travels about with her and takes her milk when he wants it, without much reference to the condition of the mare, whether she is overheated or not. The colt is as nearly a wild animal as the offspring of domesticated parents can be until he is haltered for his weaning in the fall. After this operation is completed he takes his chances with the calves and yearling stock in the barn-yard in winter, and in the pasture in summer. If he is stabled in winter, he is usually deprived of necessary exercise; and he comes to a late maturity a poor stick of a horse, with constitutional defects that condemn him to a low sphere of usefulness, and that probably occasion his sale to a horse railroad company at six years of age, when he has cost $200, and is sold for $150. If he happen by any accident to be good looking, and to have a promising trotting gait, his owner—blind to his imperfections,—raises him for a stallion; and he may, during the rest of his life, transmit his ancestral spavins, and founders, and broken wind, to a new race of miserable brutes, at from $3 to $5 ahead.

This is a simple and unexaggerated account of the way in which America is supplied with its horses. This no-system is as bad as bad can be, and it amply accounts for the fact that (except in very rare cases) really good horses are not to be had at any price, and that pretty good ones sell for almost fabulous prices. As a rule, every horse that is raised according to the above description, costs the breeder more than he sells for, and he is worth to the purchaser less than his price. It is a losing business from beginning to end, and is a disgrace to all who are connected with it. The fault rests with the farmers, who fail to see that the only safe rule in horse-raising, as in everything else connected with their business, is *to do the very best that is within their power.*

A really good horse—one that is sound in all respects, that looks well, travels well, and works well—is worth more than he costs, from the day he is foaled until his days of usefulness are over. A thoroughly wretched horse is not worth when foaled the pittance paid for stallion fee; is not worth when broken, the fodder he has eaten; and is not worth when sold, the half-price that he fetches.

Every man who undertakes to raise a colt should set out with the determination that it shall be worth when four years old, at least twice the average price of the horses of his neighborhood; and he should at every step,—from conception to training,—allow nothing to be omitted that can add to the animal's value. Of course this way costs more,—a good deal more,—than the hap-hazard way of doing the thing; but every cent that is judiciously spent in adding to the intrinsic value of a colt, is well invested, and will come back with interest when he is sold; while every cent that is scrimped out of the poor brute's ancestry, food, and attendance, is finally lost in his depreciated value, whether for sale or for use.

That the foregoing opinions may not be considered to be without foundation, the following calculation of the cost of raising colts on the two different systems is given. It is assumed that animals may be pastured during six months of the year, and must be housed and fed during the remaining six; also that in either case, a poor mare will earn, while she is bearing and suckling her foal, the actual cost of her poor keep; and that a good mare will, during the same time, pay for her more nutritious food and better attendance. It is further assumed (and the facts will always sustain the assumption) that the better bred and better fed animal will be as fully developed at the age of four years, as the poorer one at five.

Cost of breeding and rearing a common horse to the age of five years: Service of stallion, $5; keep on hay first winter, $15; pasture first summer, $10; second winter, $18; second summer, $15; third winter, $24; third summer, $20; fourth winter, $30; fourth summer, $20; fifth winter, $33; risk, $10. Total, $200.

Cost of raising a half-thorough-bred horse on good keep, to the age of four years: Service of stallion, $50; keep, first winter (2 qts. oats daily), $24; pasture, first summer, $15; second winter ($2\frac{1}{2}$ qts. oats), $30; second summer, $18; third winter (3 qts. oats), $36; third summer, $24; fourth winter (4 qts. oats), $48; risk, $20. Total, $265.

It is much more likely that the better animal will be worth $400 than that the poorer one will be worth $150. At these prices there would be a loss of $50 in the one case, and a profit of $135 in the other. In the case of the cheaper animal there is hardly a ghost of a chance of fancy value. It is essentially, by birth and education, a common dung-hill brute, and can only be sold for the commonest uses.

The half-thorough-bred, if the sire and dam have been well selected, is almost certain to be very valuable, and the chances are very great that either its beauty or its speed will give it a high fancy value, which it has no defects to lessen. If any breeder finds fault with my estimates, he may make others to suit himself; but I challenge him to make any showing, based on the actual cost of production and on reasonable probabilities of value, that will not show a loss with bad breeding, and a profit with good breeding. If the conditions are changed and the common colt is fed as well as his more aristocratic competitor, of course the difference between them will be lessened; but turn and twist the circumstances as we may, the advantage will always lie with good breeding and good feeding combined.

Ogden Farm Papers—No. 7.

I have seen this year an advantage in planting corn in drills. The corn land had been just got ready for planting among most of my neighbors and had been marked out both ways (some of it partly planted), when there came a very heavy and long-continued rain, which made it necessary to postpone work for several days for the land to dry. To plant a field in this condition would give the weed seeds too much advantage over the corn, so it had to be harrowed and marked out again. Fortunately the weather was good this time, but another heavy storm might have postponed planting for another week and caused still additional work. As I planted in drills and had no cross-markings to make, it was not necessary to wait for the whole field to be prepared before marking out. As soon as we had one or two lands plowed, they were harrowed at once and were immediately planted with a horse corn planter, which seems to have done its work perfectly well. Where corn has to be planted by hand, the extra labor of the drill system is a serious objection; but when the seed can be put in as fast as a horse can walk along the row, it is even cheaper than hill-planting by hand.

I am not yet certain whether I shall be able to avoid the expensive hand-hoeing that last season's drill crop required. When the cultivator can be run but one way, the cleaning of the rows by hand makes a serious addition to the cost. I have tried, this spring, the new smoothing harrow, which has 120 small steel teeth sloping backward at a considerable angle. For breaking up small clods and for putting in grass seed, it is better than a brush; and from what I have seen of its operation among weeds two or three inches high, I am inclined to credit its inventor's statement, that it can be run over corn, after the leaf has spread, and be run repeatedly until the corn is a foot high, without injuring it. Acting on my faith, I shall commence using it as soon as the weeds begin to show themselves, and shall go broadcast over the field once a week until it is obviously doing harm to the corn; going once lengthwise and the next time across the rows. As it takes a width of 9 feet, I can scratch over the $9\frac{1}{2}$-acre field in half a day. This will, certainly, very much reduce the amount of hand-labor, and I *hope* that it will obviate its necessity entirely, so long as the harrow can be used. After this, we shall go through once with the cultivator and shall probably have to give one hand-hoeing. As the process is an untried one, I have planted about twice as much seed as will be needed, and at the hand-hoeing the superabundant plants will be cut out. I thought it safest to have plants enough to allow for injury by the harrow, as a little extra seed will be of trifling cost com-

pared with two hand-hoeings. This is an experiment made on faith, and its result will be reported in due time.

We commenced cutting green rye, and feeding it to the cows on the 5th of May, mixing it at first with hay, to accustom the animals gradually to the change. The proportion of hay was daily reduced until, on the 12th, none was given; and we are now giving the cows all the green fodder they can eat, with a decided effect on the quantity of milk. At the first cutting the rye was not more than one foot high. It is now (May 16th) nearly double that and very heavy, but has not commenced to head out. Before we shall have finished the field, say ten days hence, the last cutting will probably be four feet high and fully "jointed." This portion will hardly grow again until late in the season; but that first cut is already starting vigorously and promises to be ready for the scythe again by the time it is needed, and I hope to have clover ready to cut early in June. The clover will be followed by oats which are now up and looking well, and these should carry us through until the sowed corn is large enough.

I already see a decided advantage from the spreading of sea-weed on one-half of my clover field. That portion did not seem to be much less affected by winter-killing than the other; but the growth is much more luxuriant, and will pay for the excessive cost of the dressing.

I wish that I had Brother Bunker's talent for conveying important truths in a homely and effective way. He has the very kernel of good farming in his "old hat."—"We want to learn what the Deacon never has learned, how to spend judiciously as well as to save; how to invest capital in the soil and make it pay ten per cent." Whatever falls short of this is not farming, but earth-skimming.

Last spring I planted about half a peck of Jerusalem Artichoke (*Helianthus tuberosus*). The seed was cut into small sets and planted in rows 3 feet apart on rich land. They were hoed once during the season, but otherwise required no attention. This spring we dug over 20 bushels—and fed enough to the stock to see that they eat it greedily. The balance of the seed will be planted for a crop this year, and the yield cannot fail to be very large, probably more than could be obtained from any other root with the same amount of labor,—1,500 bushels per acre not being unusual. An analysis of this root shows it to be about equal to potatoes, bushel for bushel; while the fact, that it remains uninjured in the ground all winter and can easily be dug in the spring, is a strong argument in favor of its use. The drawback, and it is a serious one, lies in the difficulty of clean digging. It is next to impossible to remove all of the small tubers, some of which are not larger than a pea, and any one of which is good for a strong plant the second year. They occupy the whole ground, and, after the most careful digging, there is quite sure to be enough left to start another crop. As this plant grows well year after year on the same ground, it is only necessary to devote a certain space permanently to it. If I ever have occasion to use the Artichoke patch for any other purpose, I shall put up a temporary fence and keep a few hogs on the ground, trusting that they will root out the last vestige of the crop.

I have heard that the stalks of the Artichoke are excellent for soiling, but have never had occasion to try them. If left until winter, they become quite woody and are worth something for fuel. I think, however, that it is not necessary to resort to these secondary uses to find a reason for growing the crop. The immense amount of highly nutritious food that it yields, at a season of the year when it is difficult to have turnips or mangels in good condition, and its superiority to these in nutritive value, are sufficient to commend it to all stock farmers.

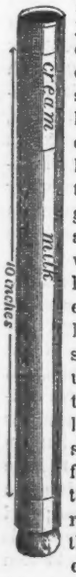
An Illinois subscriber makes the just criticism on one of my articles that I have told how to prepare butter for market, but have not told how it should be made. I am not a scientific butter-maker; that is, I have no thermometer, and allow a good deal of rule-of-thumb work. The cardinal rules, that my good German dairy-woman follows instinctively, are scrupulous cleanliness and constant care as to the condition of the milk and cream. In winter the milk-pails, when brought from the barn, are set into vessels of boiling water and kept there until the milk begins to "crinkle" at the top. It is then strained into very shallow pans on shelves in a warm closet in the house. When the cream has separated and before the milk becomes sour, (the time being more or less according to the weather, usually 30 hours,) it is skimmed with a common tin skimmer, and the cream is kept in a cool place. We churn twice a week. The churn is scalded, and if the weather is very cold, the cream is kept in a warm room for a few hours before churning. The night before churning, a teaspoonful of the dry extract of annatto for each two gallons of cream is covered with half a pint of boiling water and left to stand on the back of the stove until morning, when it is strained into the churn. We use a rotary churn and have it worked by two men; relieving each other at short intervals, so that the churning may be uninterrupted and steady. The butter usually comes in about half an hour. In summer the milk is set in an outer room constructed for the purpose, which has a cemented floor kept constantly wet. It is well ventilated and has a window to the north only. In the center of the room the skimming table stands, and all the sides are supplied with shelves at intervals of 7 inches, from the floor to the ceiling. Each shelf consists of two square sticks of 1½-inch stuff, supported by brackets from the sides. These sticks rest, corner up, in notches sawn into the brackets, but they are nailed fast. The whole of this wood-work is thoroughly painted; and at frequent intervals the sticks are taken down, washed, and stood in the sun, the brackets being scrubbed out at the same time. From the position of the shelf sticks, the pans rest on their corners. If the shelves were made of boards or slats, or if even the present sticks were laid on their sides, more or less of the bottom of the pan would be shut off from the circulation of the air, and would probably cool less rapidly, or at least less uniformly than by the present arrangement, which exposes the whole bottom of the pan to the air.

The milk is strained into these pans directly from the milking pails. The walls of the milk-room are frequently whitewashed. The door is kept closed and the window kept protected by a mosquito bar. If possible, the cream is taken off before the milk commences to sour. In the warmest weather the milk stands only 12 hours. In moderate weather 24 hours. The cream is kept in a large tin can and hung in the well, and it keeps perfectly sweet until churning time. In summer, of course, no annatto is used, as the natural summer color of Jersey butter is all that could be desired. The churning is done in the same manner as in winter, and as the cream is taken directly from the well at a low temperature, the time required for churning is about the same. After the butter has been gathered by the dasher, the plug at the bottom of the churn is withdrawn and the buttermilk is drawn off. Then the plug is replaced and a little cold water is thrown in, and the butter is slightly washed by turning the dasher. This operation is repeated a second time. The butter is now taken from the churn and worked in the manner described in No. 4 of these papers. The amount of salt used is not weighed, but it is very little indeed; not more than a fifth part of what is usual, not enough to impart much keeping quality to the butter. We deliver to private customers once a week in winter and twice a week in summer, and the butter is probably always kept in refrigerators. Under these circumstances salt is not needed as a preservative, and those who are accustomed to its absence have a distaste for it.

If there is one thing more important than all others in its influence on the quality of butter, it is to hunt out the last drop of buttermilk or moisture from the mass. The smallest perceptible amount of either buttermilk or water, will take away from the desirable waxy appearance from the outset, and will affect the taste after the first day.

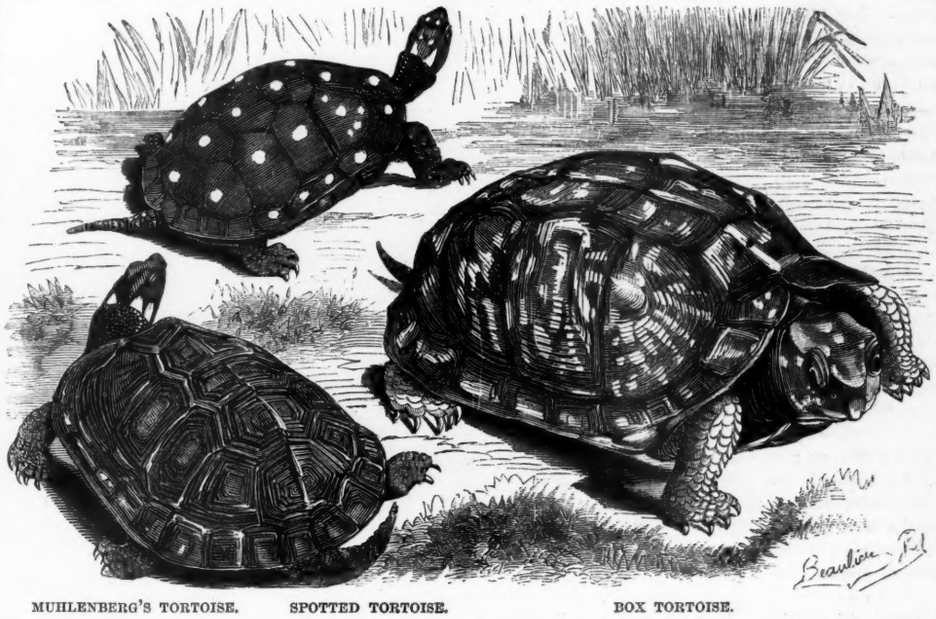
Titus Oaks' Lactometer.

Titus Oaks, Esq., is rather a quaint old farmer of Westchester Co., who, though he made his money in New York, has never weaned himself from country life. He manages a large farm, with all old-fashioned convenient surroundings, has his choice dairy, his fine yokes of oxen, and a blacksmith shop, to remind him of his New-England home, and the employment of his youth and of his ancestors. He has been experimenting more or less for several years upon the richness of the milk of different cows, and of the same cow at different periods, and many of his results have been very interesting. He has found the most convenient Lactometer—or cream-measurer, which any one has made, to be one of his own invention. He buys uniformly cylindrical glass tubes, three-quarters of an inch to an inch in diameter, with good, thick walls. The dealer will cut them in lengths of a foot. It is well to have the ends "sealed," that is, heated in a spirit lamp or fire until the glass begins to soften at the edge. They must be gradually heated and gradually cooled, or they will crack. Corks are fitted tightly to one end, and a mark on the outside is made with a pen at just 10 inches from the end of the cork within the tube. This tube is set upright in a little rack, in an old lamp globe or any such thing, filled with milk, warm from the cow, and allowed to stand 24 hours. The cream will rise, and may be measured. If one uses a rule divided into inches and tenths, each tenth of an inch will show one per cent of cream; an inch will, of course, show ten per cent. When the tube is to be cleaned, the cork is withdrawn, and a stream of water poured through. The results given by this instrument are very accurate. The engraving represents the tube filled with milk, the cream having risen.



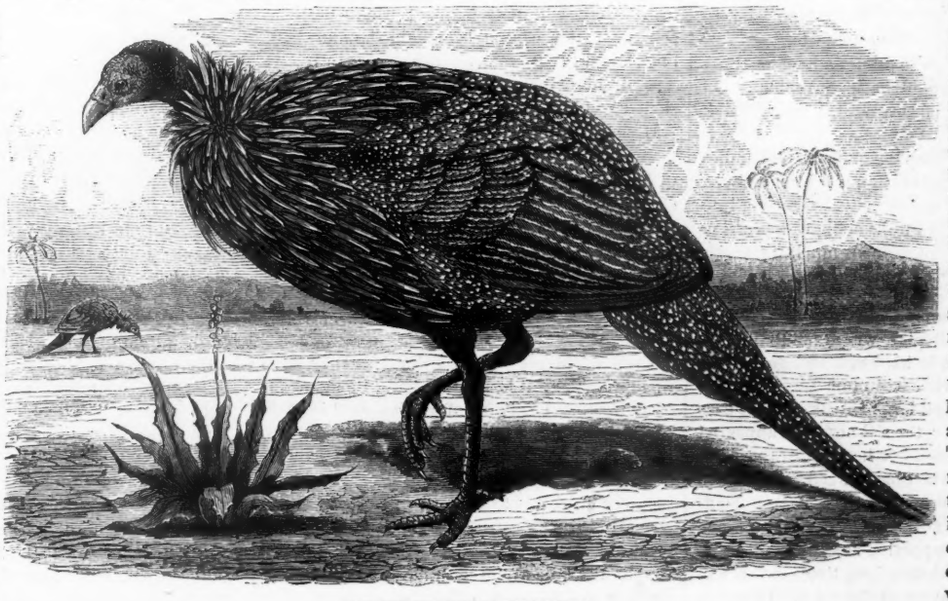
Our Common Tortoises or Turtles.

The structure of the turtles presents many interesting points. Externally they seem so unlike other vertebrate animals that it is difficult to see how they are classed with them. An inspection of the interior shows distinctly that the spinal column is present; the portions of it belonging to the neck and tail being movable, while the intermediate vertebræ, together with the ribs, are expanded and soldered together in such a way as to form the upper shell of the animal. The under shell, which is in part the breast-bone or sternum, is joined to the upper at each side. Our streams and woods afford several species, the most common of which is the Spotted or Speckled Turtle(*Nanemys guttata*), which is readily distinguished by the yellow and orange dots upon its black shell. In the young the dots are upon the marginal plates only; but in the older ones the spots are on all parts of the back and present great variety in their size and distribution. The convexity of the shell varies considerably. It is probably the best known species, and may often be seen basking in the sun upon rocks or logs close to the water, from which they slip with remarkable rapidity when one approaches. They feed upon insects, frogs, and worms. When full grown the shell measures 4 or 5 inches in length. The young ones, an inch or two long, make amusing pets for the aquarium. Another very common species, and a most interesting one, is the Box Turtle (*Cistudo Virginica*), which is found upon dry land throughout the Atlantic States, and in some of the Western ones. The color is usually a dull brown, and marked with yellowish stripes and splashes; but some have been found entirely black. The plastron, or lower shell, is divided transversely into two unequal parts, which move upon the same axis and enable the animal to entirely conceal its head, tail, and legs. This peculiarity is recognized in the common name. This species is frequently kept in yards in a state of domestication, and it seems to be little disposed to wander. It conceals itself, by burrowing late in September, and reappears in spring. It feeds on insects and vegetables.



MUHLENBERG'S TORTOISE. SPOTTED TORTOISE. BOX TORTOISE.

Muhlenberg's Tortoise (*Calemys Muhlenbergii*), found in New Jersey and Pennsylvania, and sparingly in New York, is a terrestrial species, $3^1|_2$ or 4 inches long, with a marked keel or ridge upon its upper shell, and the plates of the shell neatly marked by ridges and furrows. It is readily distinguished by a large, orange blotch upon each side of its neck. In popular language these animals are all called turtles. Some writers restrict this name to those species which are found in the sea, and call all the others tortoises. The name tortoise is believed to be a corruption of the Spanish *tortuga*, and that of turtle, which originally belonged to the dove, is supposed to have been derisively applied by sailors to the sea-tortoise.



THE VULTURINE GUINEA-FOWL.

The Vulturine Guinea-Fowl.

A bird which promises to be an acceptable addition to our list of domestic fowls has just now an interest for a large number of persons. We give an engraving of a species of Guinea-fowl, which has recently attracted the attention of the naturalists and poultry fanciers of England—the Vulturine Guinea-fowl. The specimen arrived at the London Zoological Gardens from Africa via the Suez Canal. It is said to be common upon the east coast of Africa near the Equator, and though used there as an article of food, it has heretofore only been known in England by a single museum specimen. It is described as "peculiar in having the head and greater part of the neck devoid of feathers, and without any caruncles, and in the possession of long ornamental hackles surrounding the base of the neck and breast." The description gives no idea of the size of the bird, nor does it state the color. We are informed that arrangements have been made for a supply of the birds, and before long we may be able to learn something more of its history and habits. Those who have eaten the wild bird in Africa, speak of its good qualities as a table fowl. If capable of domestication, it may prove to be valuable.

Curing Hay in the Cock.—We are not only in the habit of cutting our grass too late, but we give it too much sun, in our haste to finish the job in one day. This course may save labor, but it loses nourishment. It is not very much more laborious to cure hay in the cock. Cut the grass after the dew is off, and let it lie until the middle of the afternoon, and then bunch it in the usual way. Let it remain in this condition until the third day. Then shake up the cocks a little with a fork, bringing the bottom to the top, and let it remain until the next day. If it storms the hay will not harm much to lie over. If it is good weather, give it an hour or two of sun, and put in the barn. This course saves much of the labor of tedding and turning. There is but one raking, and the quality of the hay is very much better than the sun-dried and hastily cured article. All the sweetness and aroma of the grass are retained; and the cattle eat it with a higher relish, and thrive better upon it. If one is furnished with hay caps there is very little risk in curing hay in this way. The capped cocks might stay in the field a week without harm. A farmer may use his hay-tedder quite too much for the good of his fodder.

Walks and Talks on the Farm—No. 79.

Mr. James H. Ball writes: "I wish you would interest yourself for the benefit of the folks that stand between the plow handles, and try to induce the Collins Co. to wood some of their plows with long handles. Any one that considers the matter, will see that greater length of lever gives the plowman more control over his plow, and enables him to hold it steadier and easier for himself. Eight inches additional length to ordinary plow handles would make a decided difference in this respect."—I suppose plow manufacturers would be perfectly willing to make the handles any length that is most generally approved by farmers. Let farmers decide what they want, and the manufacturers will soon furnish it. I have a long-handled, Scotch plow, but have never had a man who liked to use it. My men all prefer the short handles—probably because they are accustomed to them. A good plow ought to run without much holding. Long handles are necessary when plowing without wheels, as they do in Scotland; but it seems to have been proven that a plow with wheels runs easier, as a rule, than one without wheels. In England, the plows are furnished with two wheels, one that runs on the unplowed land, and a larger one that runs in the furrow. The former regulates the depth, and the latter the width of furrow. On smooth land, free from stones, such plows do nice work. But on stony land they would be useless. One wheel, for regulating the depth, is all that is needed. The width must be regulated by the clevis and by the handles. With a right-hand plow, if it runs a little too wide, we bear on the left handle, and if too narrow, we bear a little on the right handle. This is not hard work, and there is no necessity for long handles. With a lever, what we gain in power we lose in time; and the length of the handles of a plow must be determined by reference to the character of the work. It is not improbable that our handles are too short; but for use on my farm, I am satisfied that plows with handles as long as those used in England, would be inconvenient. On the smooth prairies of the West, I should think long handles would be desirable.

Mr. B. also thinks that the ends of the handles held in the hand are bent too much on a circle, and that they have a proclivity for getting into one's pocket, etc. He thinks a slight depression only from the horizontal line is much the easier for the hand. In this I quite agree with him.

Mr. Handy, of Canton, Mississippi, a spirited breeder of improved pigs, writes me that a disease has broken out in his herd, and during the past month, he has lost 40 fine pigs, and also some grown sows and large shoats. In the case of the sucking pigs, "the sickness first appeared with a sort of 'thumps' or heaving of the sides. In other cases, diarrhea has ensued. Some have troublesome coughs, while others have no outward manifestations of disease, except extreme inertia, and loss of appetite, amounting to total abstinence from food for a long time—no cough, no diarrhea, no heaving of the sides. Those attacked in this way have generally been full-grown hogs. Their eyes are frequently affected—in some cases entirely destroyed. What is the matter?"—In Ireland, for the last few years, swine have been affected with a disease which Prof. Ferguson, in his Report to the British Government, in 1867, says "partakes markedly of the character of malignant scarlatina and typhus of the human subject; not alone in its symptoms during life, but also in the appearance presented after death by the different organs and tissues, excepting that in this pig disease the fatal termination occurs as quickly as from half an hour to forty-eight hours, after the first apparent accession of the malady; and the apoplectic congestions and effusions are more frequent in this pig malady than in either of the above human diseases. In the suddenly fatal cases, on post-mortem examination, there are almost invariably found apoplectic effusions of, and within, the brain and spinal cord....In many cases a pustular eruption appears about the feet, affecting the animal so painfully that it cannot stand; the bowels are generally exceedingly costive and difficult to move by medicine; but in some cases there is diarrhea in the early stages: *such cases seldom die suddenly*, but when opened after death, the air passages of the lungs are found filled with a mucus, which during life had caused severe coughing. Seventy-five per cent is below the average mortality of this disease. Unlike measles, it is found to attack with the greatest frequency and severity pigs that are kept together in great numbers, particularly when confined in sties after being collected together from different parts for fattening. It seldom makes its appearance idiopathically among pigs that are allowed to go at large."

Were such a disease to break out among my pigs, I would instantly isolate those affected, and put the others into as many different lots as possible. A clover or grass field, in which there was a running stream, would be perhaps the best possible place. Scatter a little corn for them on the grass, changing the place frequently. Give all the salt, ashes, superphosphate or charcoal they will eat. Try to avoid costiveness, and this will prevent scours. Scalded bran, with a little linseed oil-cake, will be found excellent for this purpose. All the piggeries and pens should be thoroughly cleaned out and disinfected. Scald the troughs, whitewash the walls, paint all the wood-work, floor planks, troughs, etc., with petroleum. Sprinkle carbolic acid, or if this cannot be obtained, chloride of lime, about the premises. Use dry earth freely. The old litter from the pens where the pigs had slept I would either burn or bury.

If similar means were employed *before* any disease appears, we should hear of fewer cases of hog cholera. Diseases of pigs seem to be greatly on the increase, showing that there is something defective about our treatment. As to what medicines to give a sick pig, I should consult a physician; avoiding all quack nostrums, and depending principally on cleanliness and a change of food, with injections of warm water.

I never had my pigs do so well as they have this spring; and it is due to feeding them steamed potatoes. I fed out several hundred bushels of my own, and also bought from my neighbors, paying 15 cents a bushel for them. It would be a fortunate thing for the health of our pigs if potatoes were always as cheap as they have been this spring. And at any rate, instead of feeding out our small potatoes in large quantities in the fall, would it not be better to put them in the cellar, and feed them out in small quantities daily in the spring? At the ordinary price of potatoes, we cannot afford to feed them out as *food*, but we can afford to give a few daily as a *tonic*. The error we make is in feeding out all our refuse potatoes in a few weeks to fattening pigs in the fall, and having none left for the breeding and store pigs during the rest of the year.

Several farmers have asked me what potatoes are worth to feed, as compared with Indian corn. It is a difficult question to answer, for the reason that we must take the digestibility of the food and the health of the stock into consideration. Indian corn contains 57 per cent of starch, gum, and sugar, and 5 per cent of oil, equivalent to 12½ per cent of starch, say, altogether nearly 70 per cent of starch or its equivalent. Potatoes, on the other hand, contain about 23 per cent of starch or its equivalent.—The corn, too, contains about four times as much nitrogenous matter as the potatoes. We may safely assume, therefore, that 100 lbs. of corn contains more than three times as much nutriment as 100 lbs. of potatoes. But it does not follow from this that corn is always worth three times as much to feed out as potatoes. At the West, where cattle have an unlimited supply of corn, a good deal of it passes through the animals whole; and still more, probably, only partially digested. Now roots, or any other food that would correct this, would have a greater value than the mere nutriment they contain.—Then again, it is exceedingly desirable to induce growing and fattening animals to eat all the food they can turn into flesh and fat. Roots and corn together are better than either alone.

There is nothing more important to the breeder of improved stock, and in fact to every one who fattens animals, than to so feed and manage them that they will eat, digest, and assimilate a large quantity of food, and at the same time, especially in the case of breeding-stock, retain perfect health. I find that my sheep, when turned out to pasture in the spring, although they have abundance of grass and clover, will still eat considerable clover hay when brought into the yards at night. And the lambs, no matter how much milk and grass they have, will continue to eat a few sliced mangels or parsnips, and a little bran or oats. And no one who studies the growth of animals, will suppose that the value of this extra food can be measured by the nutriment which it contains. The hay which the sheep eat when on succulent grass is of as much use to them as a few roots would be when the sheep have nothing but hay.

John Johnston writes me that, when he commenced farming, over 40 years ago, "the first three cows he bought cost him $10 each. They were good ones and large. Now, in the same neighborhood, cows are selling for $75 to $120 each. I believe," he adds, "cattle and sheep will keep their price for some years. If it was not for Illinois, I do not see what New York City would do for beef. That State furnishes from two-thirds to three-fourths of all the beef cattle in the market. For instance, last week, out of a total of 6,711, Illinois furnished 5,282. If there was a Vanderbilt to buy up all the Illinois cattle, he might control the market for years to come." There is probably no danger of anything of the kind being attempted. But it is time more attention was directed to the rearing, breeding, and fattening of cattle and sheep. The truth is, that our population increases with marvelous rapidity. And we are, as a rule, a nation of hard workers. Our resources are unbounded, and there is probably no people that work so hard and live so well as the Americans. An English farm laborer gets 50 cents a day and boards himself. Neither he nor his family can afford to eat beef or mutton.—The same man here would work harder and earn his dollar and a quarter or dollar and a half a day, would require a more liberal diet, and be enabled to get it. So may it always be. But that it may be so, the American farmer should endeavor to raise more, and better, beef and

mutton. I do not want to see meat any cheaper; but I do want, both for our own interests, and those of the consumer, to furnish meat of the best quality. Cheap as our mutton often is, it is the dearest meat in the market. Thousands and tens of thousands of sheep are sold that do not dress over 35 lbs. From 50 to 60 per cent of the meat consists of water. How much of the remainder consists of good digestible meat, and how much of bones, skin, and tough indigestible muscle, has not yet been determined.—But it is a pretty large proportion. We may urge people to eat less pork and more mutton, but it will do no good unless we provide mutton that approximates more closely to pork in actual nutriment. We ought to be able to produce a pound of mutton that shall contain as much available nitrogen and carbon as a pound of pork, and at less cost. This should be the aim of our breeders and feeders. When this is the case, we shall be a mutton-eating instead of a pork-eating people. Our mutton must contain less water and more (invisible) fat. It must be grown more rapidly, and fatted while the sheep or lamb is growing. I believe that the time will come when we shall have sheep that can make as much fat and flesh out of a given amount of real food as a pig. At present, our best mutton breeds, such as the Cotswold, Leicester, and South-Down, will not approximate to a pig in this respect—and the fact is not creditable to our intelligence and skill as breeders. Let us turn our attention to this subject.

Several fields of winter wheat have been plowed up in this neighborhood. Trouble, "winter-kill," which is only another name for water-kill, or want of draining. Many other fields are badly spotted. We attribute it to the snow, or the frost, or the wind, or the rain, or the sun. But if you would listen thoughtfully, you would hear the dying wheat on every one of these bare spots calling "tiles, tiles." By and by we shall have a drouth, and our clay land will be gaping with cracks, and we shall be praying for rain. I believe we should pray with more faith if we put in more drains. I am tired hearing men complain of the climate. If they would work more and grumble less, the seasons would be more favorable. "But we have not the capital to drain, and if we had, we cannot get men to do the work."—When you quarreled with your neighbor about the division-fence, you found money to pay the lawyers. And you spent more time and money to establish a claim to a few square rods of land that will not pay you a dollar a year, than would have drained ten acres of land. And that ten acres would have given you more real *profit* than you now get, after deducting the orchard, from your whole farm of seventy-five acres. I could easily show this to be an absolute fact.

The Doctor has gone on a trip to California, and is delighted with the people and the country. The soil is the richest he has ever seen, the people the most generous and warm-hearted, and the scenery the finest in the world. In the Napa Valley he was told "that 110 bushels of wheat had been raised there on one acre of land." "Another gentleman of unquestionable veracity," he writes, "told me that he had harvested, from three acres of wheat, 308 bushels." "But," he adds, "you never saw such farming. They plow only two or three inches deep, and crop the land with wheat year after year, for from 10 to 20 years. The consequence is, their land has become foul, and now they do not average more than 20 bushels per acre. What is needed to renovate the land is a rotation of crops and deeper plowing. Our clover will not answer, it dies out during the long, dry season.—They have a weed which they call clover, but it has not been used to any extent to fertilize the soil. In years back, wheat has been so high in price, that farmers have raised it almost exclusively. They even buy their vegetables and meat. In many cases they have what is called a 'volunteer crop;' i. e., the wheat which shells during harvest germinates, and often produces a fair crop. In some cases they will harrow grass land and sow wheat, and get a tolerable crop."

Sheep are kept in great numbers, and this is the most profitable branch of farming in California. A man with a few hundred dollars, who is willing to withdraw from society, can soon get rich by keeping sheep. They feed on the hills and valleys, and no provision is needed for the winter. "I dare not report," he says, "what several poor men are now worth who went into this business a few years ago."

A farmer in Canada writes: "I have 5 acres of hop-yard, and the crops of 1868 and 1869 are lying unsold in Liverpool. Shall I keep on raising hops or not? What is the best kind of broom-corn to grow in Canada?"—I can answer neither question. As a rule I would advise a farmer not to embark in any branch of farming that he does not understand, simply because for the time being it happens to be very profitable. But if I went into it, I would stick to it. Of all men, a farmer should not "make haste to be rich." I should have little faith in the ultimate success of a farmer who is always going into new things. To tell the truth, however, it is seldom the farmer's fault. Some of his city friends say, "Why don't you go into hops? So and So made $5,000 last year from his hop-yard. You can't make money raising corn and potatoes." Then they ask, "Why don't you raise broom-corn?—You can make more money from 5 acres than you now make from your whole farm?" Then it is Poland oats, or Essex pigs, or Cotswold sheep, or anything that happens to be popular and profitable for the time being. Such men are a nuisance. They make farmers and their families dissatisfied with the profits of ordinary farming.

The Deacon says if he does not beat me with corn this year, he will furnish the turkey for Thanksgiving. Last year I beat him badly; but this year he has planted on the best land on the farm, a two-year old clover sod, plowed with three horses and a jointer plow just before planting. Mine is *drilled* in on land plowed twice last fall, and merely cultivated this spring with a four-horse cultivator that Mr. Carhart made for me. The Deacon will do his best to prove that planting in hills is better than drilling. I think he will beat me this year, because he has the best land, but I will keep the cultivator going, and if he cultivates no more than he usually does, I shall hope to get the turkey. I have great faith in stirring the soil, and suffering nothing to grow but the corn. I have one of Howe's two-horse cultivators, that cultivates two rows at a time, and I mean to let a man spend as many days in the field as the Deacon does in his with a single cultivator. At this season an extra horse does not cost much. In a dry season an extra cultivating is almost as good as a shower, and one or two thistles will pump as much water out of the soil as a hill of corn. If the Deacon will only let the grass and thistles grow, and we have a dry, hot season, the extra cultivating will make up for the difference in the land—and at any rate the next crop will be the better for it, and the clover the following year, will show the effect. It takes more than one crop to test the advantages of a system of cultivation.

The Grass Pond Cranberry Bog—2d Art.

[*The first article was given in May, page* 178.]

PARTIAL FLOWING IN SUMMER is another of the heresies detected at Grass Pond. The common practice in the cultivated bogs is to draw off the water until it stands in the ditches, a foot or 18 inches below the surface. This has been tried, and does not work well here. The water is kept quite high in the canal, and the aim is to keep the roots of the plants constantly moist. We noticed as we walked over the plantation that the moss was moist, but not saturated. The bottoms of the boots were damp, but the feet were dry. It is claimed for this practice, that it complies with the natural conditions of the plant, and is essential to its greatest fruitfulness. We have certainly never seen so large a tract so thickly covered with berries.

MORE DRAINING NEEDED. — We noticed that the best berries, the most of them, and the most highly colored were those which grew immediately upon the banks of the side drains. Even the hillocks left by the ditcher were completely overgrown with the vines; and heavily laden. These ditches were 200 feet apart, and the water stood in them perhaps 6 inches from the surface. There was, we should judge, a third more fruit on any square rod next the drain, than on any square rod farthest from it. It would certainly pay, then, to put in the side drains 50 feet apart, instead of 200. The expense would be paid in the increased yield of a single crop.

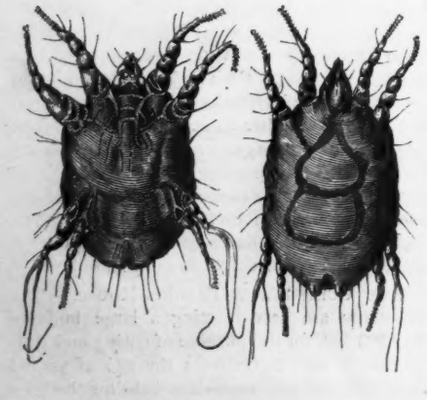
PICKING THE BERRIES is done by women and children, who flock in from the surrounding region, as fast as they are wanted. The proprietors have never been obliged to send away for this kind of help. It takes about 200 pickers to do up the work seasonably, beginning early in September. The pickers are arranged in a row on the edge of the vines. There is one overseer to 25 pickers, whose business it is to see that the ground is marked out, and that the vines are picked clean. He has stakes furnished with a line to each about 2 rods long, with an iron ring at the end weighing about a pound. He sticks his stake at the edge, and throws his ring the length of the string into the vines. 3 feet from the first he sticks another stake, and throws off the second string parallel to the first. This makes a plot of ground about 3 feet by 33, upon which the first picker enters and remains until it is cleaned. Each picker is served in the same way. She has one or more two-bushel baskets labeled with her name, into which the fruit is poured as fast as gathered. The baskets are transported to the packing-house by boat, or on carts, and there the picker is credited with the number of quarts found in her basket. The picker receives one and a half cents a quart. A smart picker will make $2.00 a day and upwards.

THE CURING AND PACKING-HOUSE. — The Company are now erecting a large building 25 × 100 feet, for the purpose of curing and storing the crop. It occupies the site of an old saw-mill, and the lower story is below the level of the ground upon three sides. It is made of heavy timber, and has a capacity to store three thousand or more, barrels. The curing process, though often neglected, is a matter of great importance to the middle men, who transport, store, and market the crop. The berries take

on a finer color and keep much longer. The curing box, or tray, is 8 feet long by 4 wide, and about 3 inches deep. The bottom is made of common laths about an inch in width, with spaces not quite a quarter of an inch between. These boxes are filled with cranberries and piled one above the other in the curing, with a space of two inches between, where ventilation is provided. The sun must not shine upon them. They are cured in from four to six weeks. They are then put into barrels, and are ready for market. The part of the house designed for storage is made nearly frost proof, so that the crop can be kept on hand until prices suit. This is a much better arrangement for curing and storing this fruit than we have seen in any other quarter. The Grass Pond brand is already well known in the market, and has deserved a high reputation. The remaining 600 acres will soon be planted, and then Coventry will hold its own against Cape Cod, Ocean County, and the world.

Scab in Sheep—Cause and Cure.

All breeds of sheep in all countries are more or less subject to the disease called Scab. A flock in perfect health and very clean, is not likely to have the scab; but if from neglect, improper food, or dirt in the wool, the skin becomes a suitable seat for the disease, it is liable to come, and run through the flock. It closely resembles the itch in man, and may be cured by similar remedies; namely, sulphur, mercury, tobacco, arsenic, or some mineral or vegetable poison applied externally. The disease is caused by a very minute parasite called the scab mite, *Acarus scabei*—so small as not to be noticed by the unaided eye without close scrutiny of the diseased parts. We represent them greatly magnified in the accompanying engravings. Figs. 1 and 2 exhibiting the upper and lower sides of a female, and figure 3 the upper side of a male *Acarus*, drawn to the same scale. These little creatures, which are about $^1/_{60}$th and $^1/_{85}$th of an inch in length, according to sex, find no proper dwelling place on the healthy, clean skinned sheep of which we have spoken; but when they do find the requisite conditions they multiply with astonishing rapidity, and spread through the flock, and from flock to flock. The females burrow in the skin, and make little sores, in or under which they deposit their eggs, which hatch, and in a short time, go to work producing broods themselves. The sores thus caused run together and form scabs; they make



Figs. 1 and 2.—FEMALE SCAB MITES.

an intolerable itching, and the sheep bite and scratch themselves fearfully, tearing out their wool in patches over their bodies. The disease sometimes becomes an epidemic, and through whole regions the flocks suffer so terribly that government action has been necessary to prevent their extinction. The suffering animals become more and more emaciated; their wool falls off; their bodies are covered with nauseous, scabby sores; their nervous system is incapable of sustaining the pain, and its functions, with those of the skin, being deranged, the digestive organs sympathize, and the sheep finally die.

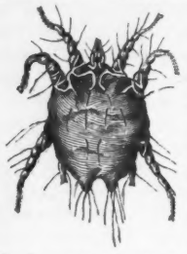


Fig. 3.—MALE SCAB MITE.

The remedies for the scab are numerous. They consist of dips and washes containing vegetable or mineral poisons, as already stated. Precisely similar treatment is required as in dipping to destroy the ticks, described in the June number, except that it is always necessary to scour and scrub the scabby parts with brushes. It is necessary to repeat the dipping sometimes, and for security it is always best; although the effect of the dipping, cleansing, and scrubbing upon the skin is to render it an uncongenial nidus for the insect for a considerable time, it is probable that though the *Acarus* breeds in the skin it lives upon the diseased excretions like lice, which will not remain upon cleanly persons.

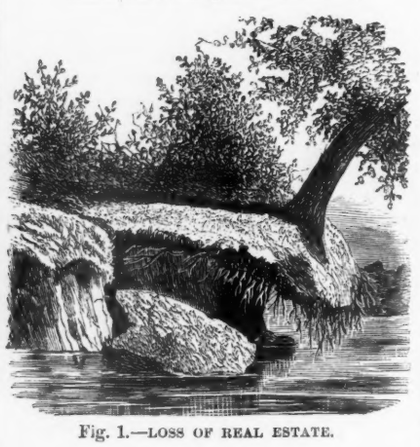


Fig. 1.—LOSS OF REAL ESTATE.

The Banks of Streams.

Brooks and larger streams add greatly to the convenience of farming, as well as to the beauty of rural scenes, and to the charms of country life; but they have their inconveniences too. They rise and overflow, and wash away their banks; shift their channels; carry away fences and timber; in short, do all the damage they can. Heaps of stones and even walls are washed around and demolished by the force of the current. Breakwaters of piles driven in the stream, having plank upon the outer side are useful in preventing the tearing effects of ice and very rapid streams; but they do not prevent the action of small waves which rapidly wash away sandy banks. A very gradual slope is the only form of bank which will effectually resist the action of waves whether great or small; and this is the form of ocean, lake, and river beaches, which are found of the most permanent character.

The course through meadows is naturally circuitous, and when brooks are swollen, the banks wash away in a manner to extend the "bows," and at the same time to enlarge them, so that finally the "necks" are worn through; and then the land is still further defaced by empty beds of the stream, here and there, piled with gravel, and utterly barren. Were the brook to be straightened it would probably have so swift a current that unlooked for damage might result. Besides, dams might be necessary to prevent the drawing down of ponds, or other bodies of water upon adjoining property. If the meandering, babbling brook is to be sacrificed to utility, the best way is to dig a broad, straight ditch, wide and deep enough to carry all the water even in floods; but as shallow and broad as possible. If the sides have a slope of not more than one foot in three, and can be left to lie long enough to get a good sward upon them they will be far less liable to be washed away. The more sloping the banks the less danger will there be of their being worn by the water. A brook thus straightened is a *ditch*, however, and though a gain in picturesqueness is made

Fig. 2.—FORM OF CHANNEL.

by giving the banks a curved slope, as shown in figure 2, by the dotted line *b*, yet no perceptibly better protection is afforded them. If, however, the brook is crooked, this peculiar curve in the banks which form the outside of the turns, is desirable,—first, as it deflects the stream more gently; second, because the channel will carry more water than another of the same depth, the sides of which are simply inclined planes. Where such turns are quite abrupt and the volume of water great, simply sodded banks are not sufficient; and it becomes desirable to plant willows on the outside banks of the bends. This is best done by cutting good, stout, willow sticks, two feet long, and an inch in diameter, and driving them into the bank on a slant, the tops inclining down stream and standing only three or four inches above the ground. The willows should begin at low water-mark, and extend nearly or quite to the top of the bank.

The action of rivers in wearing their banks is one of the few cases in which an absolute loss of real estate can occur without the loss or alienation of the title (see fig. 1). Acres, little by little, disappear, and the best engineering skill has sometimes failed to prevent it. One great difficulty is encountered in the ice which cuts and wears the banks, so that even if graded very well and set with willows or other water-loving trees, they will be cut away by its force. Except in places where breakwaters should be built at public expense, or by associations of citizens, a plan somewhat like the following will prove effectual as soon as the plantation is established.

The bank should be graded to a uniform or ogee slope, (see fig. 3;) and must be protected,

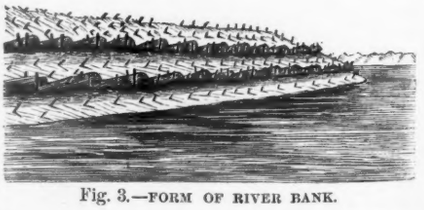


Fig. 3.—FORM OF RIVER BANK.

if necessary, while that is done, by a board fence set at low water-mark. When graded, fascines or long faggots are made. They should be of any common brushwood, alder, oak, maple, etc., made into bundles 8 inches through, and 10 feet or more in length, bound tightly once in three feet by withes or wire, just as they make *fascines* for military engineering. These may be laid in trenches several feet deep if there

is much danger from ice: the lower ends up stream, resting on the bottom of the trenches, and the upper ones coming out to the surface. They are confined in place by stakes, as shown in figure 4. These fascines will be found to

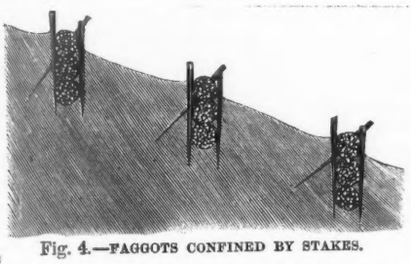


Fig. 4.—FAGGOTS CONFINED BY STAKES.

have a very strong anchorage, and though their tops may be broken and twisted by the ice, they will hold well and prevent the washing of the bank. Two or three lines of these fascines set 4 to 8 feet apart, may sometimes be necessary. The stakes used may be of willow, which will take root, and bear rough handling by the ice. When thus protected and guarded, willow cuttings, the larger the better, may be set upon the slope. These should be of the White, or Pow-

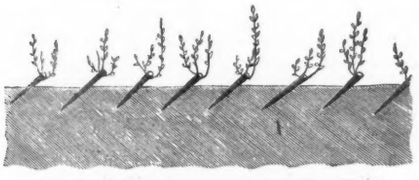


Fig. 5.—MANNER OF PLANTING WILLOWS.

der Willow, and they ought to be set with the tops pointing obliquely down stream—as indicated in the engraving, figure 5.

Grub-in-the-Head in Sheep.

Whoever observes the motions of a flock of sheep in the heat of summer, while at pasture, will see them huddled in groups or feeding in phalanxes with their noses upon the ground, and thus held in an obviously constrained position. They do this to be in a measure secure from the attacks of that pestering Gad-fly which is the cause of Grub-in-the-Head. It is called *Œstrus ovis*, and is closely related to the Bot-fly described on page 177 (May). Figures 1 and 2 represent the female, which is brown and yellow-banded. The fly aims to deposit its eggs within or close to the nostrils of the sheep. This is accompanied by no pain to the sheep, and probably, only by a disagreeable tickling sensation. The animal, however, seems to be aware of the effects soon to follow, for the eggs hatch in a short time (the books say immediately) and the little worm ascends the nostrils making the poor brute almost wild with nervous distress. It tosses its head, snorts, runs, stamps, and manifests the most acute excitement. The *larvæ* pass up the nostrils and penetrate the sinuses where they attach themselves and develop. Youatt says: "Having traced their circuitous course through an aperture under the turbinated bone into the maxillary sinus, they sometimes lodge there; others proceed thence into the frontal sinus and some reach the cavity of the bone of the horn. They are found occasionally in every cavity with which that of the nose communicates." The little grubs are at first white. They attach themselves by means of two hooks like those of the horse bot, and live upon the mucus secretions of the cavity in which they are lodged. When fully grown they present an appearance similar to figs. 3 and 4, which exhibit the upper and lower sides. There seems to be a great disparity between the size of the maggot and that of the fly, but it is not more than frequently occurs. When mature, the grub is able to exert a great force in wedging its way out through the narrow openings by which the little maggot entered, and again causes the sheep very great pain and nervous distress. It falls to the ground and burrows some inches below the surface. Its skin hardens to a shell, and the chrysalis, or *pupa* hatches into the perfect fly in 40 to 60 days. Thus the eggs are laid in July to September; the larvæ leave the sheep and enter the ground in April to June; the pupæ remain in the ground until the flies hatch out, in the heat of summer, and this is their round of life.

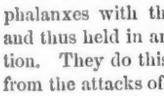


Fig. 1.—BOT-FLY.

Fig. 2.

Fig. 3.—GRUB, UPPER SIDE.

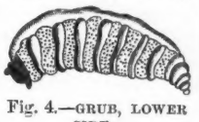


Fig. 4.—GRUB, LOWER SIDE.

Farmers often plow several parallel furrows at a distance of 8 or 10 rods apart for the sheep to bury their noses in. A daub of pine tar upon the nose is the best preventive and must be frequently renewed. Wild sheep may be made to smear their own noses somewhat by putting tar in the troughs and sprinkling salt over it. As the fly has never been known to eat anything, and in fact, has no perceptible mouth, efforts at poisoning it would fail. The grubs are easily examined in the spring by getting the butcher to split open a few pates of rather ill-conditioned sheep, if such can be found in market. Several grubs will probably be found in some. They appear to have but little effect on the general health of the sheep; but no doubt, when occurring in large numbers, they increase the violence of inflammatory and nervous diseases, and perhaps cause them, especially at the time of entering and leaving the sinuses.

SUPERPHOSPHATE FOR TURNIPS.—There will be a great demand for this fertilizer for the turnip crop soon after this month (July) comes in. Its effects upon turnips are wonderful, and a small quantity goes a great way—150 lbs. to the acre distributed evenly in the drills, or 200 or 300 lbs. sowed broadcast, are about the quantities usually employed. The value of a superphosphate depends upon the amount of phosphoric acid present. Bones are the usual source of this substance. It exists in them, combined with lime, in the form of a phosphate of lime, called "bone earth," which is insoluble in water and slowly soluble under the influences acting in the soil. In true superphosphate, part of the phosphoric acid, still combined with lime, but with water also, is quite easily soluble, and the remainder is more easily acted upon than raw bone, unless it be ground very fine. Turnips grow very fast, and need soluble manures to promote this rapid increase; and though they do not take a large quantity of phosphate from the soil, they seem to need it in abundance and in a soluble condition ready at hand, or they do not do their best. In buying superphosphates, the purchaser is at the mercy of the seller; and unless the State offers him some security, the only reliance he has, that he gets what he pays for, depends upon the interest or honor of the maker and seller, which too often fails him.

Earth Sewage—or the Removal of the Waste-water of Country Houses.

In order to secure the full benefit that the Earth System offers, it is necessary to provide for the inoffensive and economical removal of the waste water of the house—not only that of the kitchen sink, but that from sleeping-chambers and dressing-rooms as well.

This may be done by two systems. The first (Fig. 1) comprises a cask nearly filled with earth, with a board cover, and having a large wooden funnel (with a lid) leading to the interior of the cask. It may stand beside the house, and receive, just below its top, the waste-pipe of the kitchen sink. It should have a leaky bottom, so that the water it receives may escape after it has been filtered by the earth. The space between the top of the earth, and the board cover, should be packed full with horse manure; which will prevent freezing, and the puddling of the earth, which would keep the water from running through. The wooden funnel should also be filled half way up with the same material. The kitchen waste will take care of itself, and the slops from the chambers need only be poured into the wooden funnel. The only obstacle to the successful working of this arrangement is the freezing up of the earth. We have had no trouble (in the latitude of New York) in keeping it in operation all winter. A large hogshead, arranged as above, took care of the wastes of a household of four persons from November until March, without attention; and at the end of that time, the earth (having retained the impurities of the water) had become a most valuable manure. Only during last week was the water escaping from the bottom of the cask perceptibly impure, and this was the signal for changing the earth.

The same cask has, during the summer, received only the water from the sink, and, being uncovered, it is bearing a marvellous growth of weeds, which not only look well, but prevent the faintest odor from escaping from the surface of the earth. Another cask (covered) is doing satisfactory work with the up-stairs slops.

A still more satisfactory plan is shown in Fig. 2. This provides for the complete absorp-

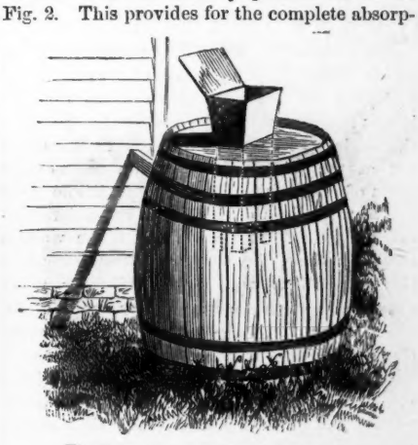


Fig. 1.—CASK FOR HOUSE SEWAGE.

tion of all the wastes of the house directly by the earth itself, and requires but little attention.

At a convenient point in the garden or lawn, a kerosene barrel, A, is sunk with its open end level with the surface. The house drain, D, runs to it with a good fall, so that every thing that passes the strainer of the kitchen sink will

be sure to be carried through. This drain has a diameter of 4 inches, and it enters the barrel about a foot below the top.

From each side of the barrel, at the same depth from the surface, a 3-inch tile runs out (B & C). This tile continues as far on each side of the barrel as to the lines *e*, *e*, where junction pieces are put in to connect it with a 2-inch tile. From these junctions the side drains continue on with 2-inch tiles, with circular bends at the corner, to commence the drains *f f*. The first 10 or 15 feet of the parallel drains are laid with 2-inch tiles, and from this on are continued to a total length of 50 feet or more with 1½-inch tiles.

The side drains, B & C, should be laid exactly level, so that the water will flow out equally through each, and that which does not enter the inner parallel drains will pass on to the outer ones. The parallel drains should have a slight fall, so that the water will be able to flow through the whole length, but not fall enough to lead the water rapidly to their lower ends.

The drain from the sink to the barrel should have cemented joints, to prevent the escape of

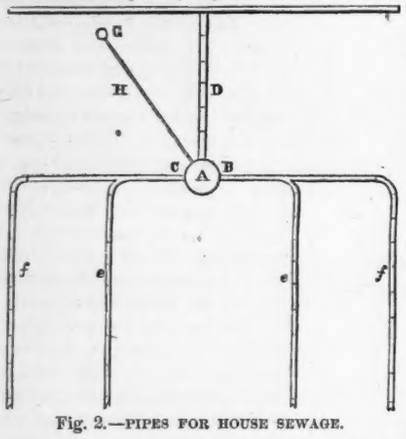


Fig. 2.—PIPES FOR HOUSE SEWAGE.

any of the water; and those beyond the barrel should have spaces between the ends of the tiles of ¹/₄ inch, the ends of the tiles being inclosed with collars. The entrances to the tiles B & C are protected with wire netting, to prevent the entrance of coarse particles. Slops from the bedrooms may be poured into the barrel (which has a movable cover), or there may be a covered funnel, G, nearer the house, connecting with it by the drain H of 3-inch tiles. In this case the funnel must have a strainer, to protect its drain, which, like D, should have cemented joints.

Beyond the barrel, the tiles are only 10 or 12 inches from the surface,—barely out of reach of the spade, and the fertilizing water that oozes out at the joints will be within reach of the roots of crops; while in time, the whole space between the lines of drains will be rendered exceedingly rich. It is not likely, if the work is carefully done, that such an arrangement as this will fail to work successfully for many years; and when a stoppage does finally occur, it will be but a trifling job to take the tiles up, clean them out, and lay them again.

The only attention required, is an occasional cleaning out of the matters accumulated in the barrel; and in cold climates the mulching of the ground over the tiles to prevent freezing.

We are now using precisely the plan here laid down, and so far as our experience with it goes, it is absolutely free from objection. It completely supplies the only deficiency of the Earth-Closet system, and the care of all sorts of waste about our own old-fashioned country house is now effected with an entire absence of odor that even the best appointed house in a well sewered and watered city, cannot equal. The system is so perfect, that it must rapidly work its way to universal adoption.

"Harris on the Pig."

BY LEWIS F. ALLEN.

"Harris on the Pig" is a new and valuable book, much needed in the present condition of domestic Stock Breeding in the United States. It is written by one intimately acquainted with his subject, and knows well how to treat it. It is a happy circumstance that some of our late writers on such subjects, can make something beyond mere compilations of authors and books that have gone before them, and those writers and books chiefly from abroad. What we need is American books, native in spirit, experience, and treatment; thoroughly practical and comprehensive, as well as exhaustive, in the departments which they discuss. Such a one we consider this to be. We here have the entire swine family under discussion, from the untamed wild boar of the forest, running through all its grades of civilization and improvement, to the most refined, and delicate porker which takes its ease in the sty, grazes in the clover-field, and in the end supplies the human family with a luscious and savory, as well as most necessary article of food.

Charles Lamb, the delightful English essayist, wrote one of his charming articles in laudation of "roast pig." Had he been disposed, he could have found in its flesh material for several other essays, equally amusing and entertaining, as its uses and virtues are so varied by condiment and cooking. But aside from any fanciful, or lighter view of the pig, like that of Lamb, the edible, and commercial, as well as economical discussion of the breeding, rearing, and treatment of swine as an important branch of our stock growing, is not only well worthy the attention, but the close study of every farmer in the land, as well as of the village dweller who keeps but a single shoat in his pen to eat the daily slops from his kitchen, or the remnants from his table.

Mr. Harris takes all the different approved breeds into his category, and treats them with discrimination, fairness, and excellent judgment. He describes them all minutely, tells us where, and how they differ in their good qualities; which breeds are best fitted for particular uses, climates, and soils; describes their best way of keeping, their most profitable food, their treatment from birth to breeding or slaughter; and, in fact, leaves nothing untouched or unsaid, that will develop the most profitable end in the various purposes for which its flesh may be designed.

The origin of the present different breeds, too, is well discussed, and much light is thrown upon matters connected with swine breeding and treatment, seldom before treated, and but little understood. He has invested the subject with a dignity seldom known in connection with so vulgar a creature, as the *hog* is usually considered, and elevated it to a companionship with the other stocks of the farm, which few have ever been willing, even among its admirers, to concede. The illustrations, in the way of portraits, of the different breeds, are generally correct and in good taste, although occasionally faulty in execution, but on the whole creditable and true to their originals.—The plans of piggeries, with their various arrangements and accommodations, modes of feeding, etc., are excellent, and well planned.

We might make liberal extracts from the work with decided benefit to the reader; but when the book is so readily obtained, and the price so small, any one who wishes to learn more of the subject than they now know, should get the book, study it closely, and profit by its instruction. The book has another merit; viz., it is the *only* one of its kind which we have seen so fully treated by an American author. Let no one think that a study of the pig is a low subject. Some of the most eminent husbandmen of Europe have made the subject of swine and their improvement a study of years; and the most gratifying success has crowned their efforts. Let it be so here. No subject whatever, which tends to the economy of the farm, is too low for thought and scrutinizing attention by him who owns, works, and lives by its production. We look upon all kinds of *improved* stock as giving a larger amount of profit with a given amount of food, as we look upon improved farm machinery and implements, as doing a greater amount of work with less manual labor and expense. The time has arrived in which we can afford to keep neither poor stock, nor poor implements, when we expect fair profits from our farms; and every one should aim at obtaining the best breeds of all that he can in order to arrive at the highest degree of success. In this the pig is quite as important as any other branch of stock rearing. We commend this book to every farmer and country dweller in the land.

Imported Jerseys.

There is a great rage for animals of short pedigree, and if one comes from Jersey no more questions are asked, whether the animal shows strong marks of the Guernsey blood and the old yellow Norman stock, or not. We have men starting Jersey herds who have no intimate acquaintance with the stock, and breed simply because they suppose money is to be made out of them. Herd-book animals of certain fashionable points sell from two to five hundred dollars each; not on account of their intrinsic value, but because of the artificial value imparted to them by the herd-book. They are supposed to have had the judgment of the best breeders passed upon them, and to have inherited from a long line of ancestors the best qualities of the breed. The herd-book in reality merely authenticates the fact of importation in the case of imported animals, without, generally, going into the history of the animal's ancestors across the water. The Jersey stock is pure bred at home as a rule, but there is a difference there, as everywhere, among breeders. Some are careful and conscientious men, others are not. Some breed from the best, and others from what they happen to have. We do not believe there is any foundation in fact for the preference given to short pedigrees. The best Jerseys that could be bought without regard to price have been carried off from the island for the last thirty years. The effects of this steady drain upon the stock can be readily understood, when we consider that the island is but a small patch of land twelve miles long by five broad, embracing only 39,000 acres. It is a region of orchards and gardens, and supports with a varied industry a population of some sixty thousand. No inconsiderable portion of this very limited territory must be devoted to other purposes than dairying, in order to sustain the population. Certainly not more than an average agricultural township can be left as the breeding ground of these cattle. Yet from these stinted farms, and from these farmers of limited means, the Jerseys are annually drawn and exported, every man tempted by the high prices offered to part

with his best. Is it any wonder that this breed, naturally small, has been growing smaller under this long-continued process of depletion. Meanwhile the breeders in England and in the United States, who have been getting the finest animals the island afforded, have been busy in improving them. They have as much science and skill in breeding as Jersey can boast, with ampler fields and ampler means. Nothing that skill and money can do has been left undone to bring these animals to the perfection of their kind. They have lost something of their ragged points, and have grown handsome. Their weight has been increased without any loss of constitutional vigor. The quantity of milk and butter has been increased. Intelligent men, well acquainted with the history of the breed, have no doubt that better Jerseys can be bought, either in England or in this country, than can be had on the Island of Jersey. They have all the good points of the breed, with greater weight and better form. They have been as carefully bred, though names have not always been given to the animals, and pedigrees recorded. Some of them have come down through ten generations of thorough-bred ancestors in this country, yet they cannot go upon the herd-book, because they have not ancestors with names, and no records have been kept. If they were worse animals, and came from Jersey last year with the same oblivion of ancestry, they would find place upon the herd-book without question. Some very respectable breeders are not able to see the wisdom of this partiality for recent importations and short pedigrees. They breed from the best animals if reasonably sure of their pedigree, whether a record has been kept or not. If "like produces like," they will have the best herds in a few years; and gentlemen, who are breeding from inferior animals because they are direct from the Island of Jersey, will wake up to their folly with a short purse as well as a short pedigree. *

Second Clutches of Turkeys.

We have just eaten the last of a flock of fall hatched turkeys; weight eleven pounds strong. They came off in September. Farmers generally dislike these second broods, and are quite willing to sell them at very cheap rates, any time in October or November. They do not want to have the wee things peeping about in the cold, getting frost-bitten, and dying during the winter, and if they live, eating twice as much corn as they are worth. With turkeys at ten cents a pound, this may be the true view of the case; but when they are worth twenty-five to thirty cents a pound, there is another view of the question. We have tried these second broods for several years—and on the whole think they pay pretty well. Sometimes a turkey that comes off with an early brood, if well fed, will lay a second time and want to set. We always let her. If the first setting is broken up by vermin or from other causes, they are sure to lay again. We always welcome the second broods if we can get them any time before the first of September, and do not object to them as late as the first of October. If we can get them in July or August, it is so much clear gain. They are much more likely to live than the early broods, of which a large per cent will die, without they have the greatest care and watching. But in the summer, the chicks find a warm atmosphere, and plenty of animal food in the pastures and woods. They need much less feeding, and grow more rapidly. If they reach two pounds' weight by November 1st, we always consider them safe, and a very good investment. But July birds will sometimes weigh five or six pounds by Thanksgiving; and need not be kept until spring before they are ready to slaughter. These late broods make an excellent market for small potatoes and corn nubbings all through the winter. The secret of raising them, and making them profitable, lies almost wholly in the regular and full feeding. When well fattened, they have the advantage of coming to a bare market, and bring a high price. Most farmers kill off their flocks either at Thanksgiving or Christmas and New-Year's. By February, turkeys are higher, and in March and April it is difficult to get them at any reasonable price. In the spring they are not only in demand for poultry, but for breeders. Men who ought to know better, will readily buy an eight-pound turkey hen, for two dollars, when they would leave a twelve-pound bird at three dollars, much better worth four. This we do not eulogize, but as long as people buy such birds, and pay for them, we raise them.

Will it Pay to Grow the Yellow Locust?

I was down at the wharf the other day, where a cargo of Locust logs had just been landed from Long Island. I sat down upon a stick about 12 feet long, and a little over a foot through at the but, and said I to the carpenter, "What do you have to pay for such timber as this?"

"It costs me," said he, "a dollar a foot by the quantity, and that stick would come to about eight dollars."

"And in such a tree I suppose there would be at least two good posts above the but-stick?"

"Yes, or what is better, a second cut for treenails, worth as much a foot as the but."

"That must pay pretty well?"

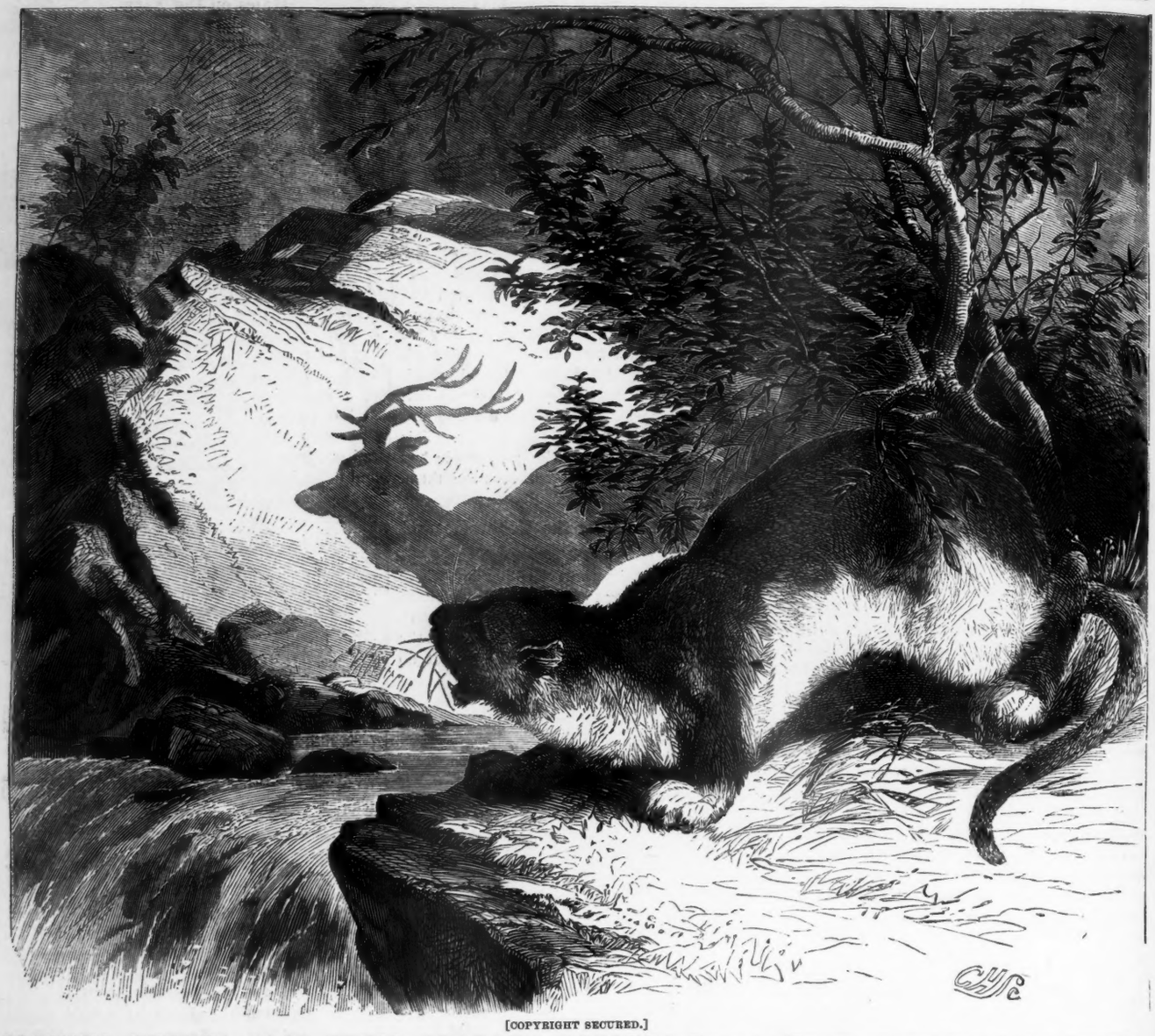
"Yes, it does. I know a man that sold the timber on an acre for $2,700, standing."

That was a pretty large story for an acre of thin, gravelly soil, but a little estimate will show that it is not extravagant. The stick upon which I sat had forty-four circles that could be counted, indicating as many years of growth. It was worth, standing, at least $15. Six hundred such trees would not make a very thick grove upon an acre of land, and these would be worth $9,000 at the present price of the timber. But it takes forty-four years to grow such a crop. Land suitable for growing it can be had in any desirable quantity at, say, $25 an acre. It is generally calculated that money at interest doubles once in about ten years. Twenty-five dollars doubled four and a half times would be only $500 at the end of forty-five years. But, it is well known, that in making a locust plantation we should put out three or four times six hundred trees; and the thinnings of the plantation from time to time, with the pasturage, would pay the expense of planting and cultivating for the first few years. At twenty years of age many of the trees are large enough for posts and treenails, and might be cut for these uses with great advantage to the remaining timber. After the trees are once fairly started, there is no need of cultivation; and the quality of the land is all the while improving, as the increasing crops of grass abundantly testify. Can a farmer who has plenty of land, make any better provision for his old age, or for his heirs, than to plant a few acres in Yellow Locust? With all the deductions to be made from the figures there must still be a large margin for profit. CONNECTICUT.

Mules on the Farm.

Mules are almost universal on the sugar and cotton plantations of the far South, while the favorite team on the Northern farm has always been the ox; partly because his carcass is so valuable when cut into steaks, and partly from the rough character of the soil, which makes a slow team exceedingly desirable. The mule is much stronger than the horse, but not so fast as to endanger plows on stony soils, or carts on rough roads. They are more easily kept than either horses or oxen; and will consume almost any rough fodder with relish. A serious drawback to the ox team is, that it demands pasture a part of the time, or its equivalent in green fodder. If kept up continually and fed with dry hay and meal, oxen will lose appetite after a while and fail in flesh. The mule can be kept up as steadily as the horse, without any loss of flesh or strength. This is a great advantage to those who have full work for their teams. It rather agrees with mules to have a daily task, and to be kept straight at it. A week's idleness seems to demoralize them, and they have to learn their lesson over again. They are not as liable to disease as either the horse, or ox, and are much longer lived. A well-used mule team will last thirty years; and that is about long enough. But it will be said, the mule is such an inveterate kicker that you never feel safe with him. Kicking is his aptest mode of defence. It is so natural to return blow for blow that the mule receives a good education in the line of kicking rather than in forbearance. If we are persistently patient with him, and treat him with kindness, he will lose his fears, and his disposition to kick. If you want a good tempered, mule team, you must keep your own temper. You must join Mr. Bergh's society and come into good fellowship with brutes. Yelling, scolding, cursing, and blows will make a vicious team almost inevitably. A well-broken mule team is a great prize upon any tolerably smooth farm. There is more work in them for the amount of fodder they consume, than in anything else we have ever tried. As we are only to lose his carcass at the end of thirty years, it may happen in the progress of the world, that by that time mule meat will be in fashion, and the butcher will give as much for him as for an ox. Let us try the mule team, and wait doubtfully for the beef.

REPAIRING BOARD FENCES.—There are many dilapidated board fences that by a little attention might be made to last many years with comparatively little expense. A few new boards should be provided and judiciously used to strengthen the weakest panels. The trouble with such fences is that the ends of the boards nailed to the posts are so weakened by decay that the nails will not hold. We should have some broad-headed nails; but in the absence of these it is not difficult to make a few washers out of hoop-iron, that will enable the nails to fasten these partially decayed boards to the fence. Posts that are partly or wholly rotted off at the surface of the ground may be repaired without taking the boards from the upper portion, by digging a hole by the side of the old post and inserting a piece of an old oak rail or other suitable wood, and spiking it on to the post. In some such way as this many old fences which are rapidly becoming useless may be patched up so as to last until they can be replaced by new ones. If any readers have discovered a more excellent way of doing the work we shall be glad to hear from them.



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"COMING EVENTS CAST THEIR SHADOWS BEFORE."—Drawn by HERRICK.—*Engraved for the American Agriculturist.*

The artist has represented the American Panther awaiting his prey, and in so doing has given us a pleasing picture. The shadow in this case is more telling than the substance. An animal so large and active as the Panther is very destructive to game, and a single pair will hold the animals over a large territory in terror. In the case of the panther and the deer we have a nearly equal match. The deer has the most acute scent and hearing to warn him of danger, and great fleetness to allow him to escape it; while the panther has all the crouching cunning of the cat, and the power of limb that will allow it to make a sudden spring upon its prey. Not only is the panther destructive to the more useful of the wild animals, but its inroads upon the domestic ones of the new settlements are the cause of serious losses, and its complete extinction within our borders cannot be far distant.

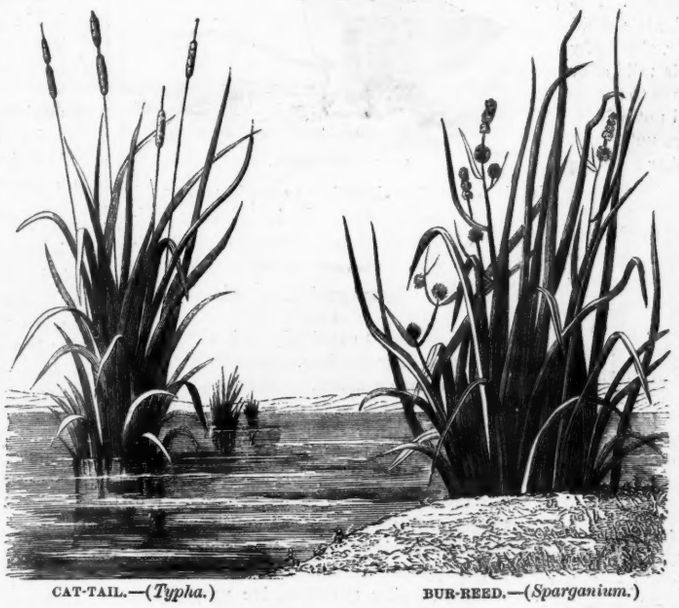
Absorbents.

An empty barn-yard at this season is the sign of a slack farmer. He has cleaned out his styes, yards, and the barn cellar, and the planting is all finished. Weeks or months go by, perhaps, before he thinks of laying the foundation for the next crop of manure. The cows are yarded at night, but there is nothing to absorb either liquid or solid manure. It is exposed to the hot sun, the rains, and the winds, and much of its value is lost. The summer is the best time to make manure, if the materials are seasonably furnished. The process of fermentation goes on much more rapidly, and the valuable gases are diffused through the whole mass of absorbents. While the yards are bare, no farm work will pay so well as gathering absorbents, at least enough to cover the whole surface an inch or two in depth. It is not necessary to fill the yards all at once. A few loads added every week will prevent loss. Shore farmers begin to gather the new crop of sea-weed this month, and no one who has access to this article should fail to use it. All waste vegetable matter makes a good absorbent, and swells the compost heap. Peat and muck thrown out during the past season and weathered, are excellent; but that freshly dug soon cures in the yard and should not be overlooked, if the others fail. If these are not available, use surface soil. The value of dry earth as an absorbent has not begun to be appreciated. Turf makes a good absorbent, and by its decay adds value to the manure. It is much better for a farmer to peel a few rods of his best meadow, than to have his manure wasting all summer for want of absorbents.

HOW TO GET WORK DONE ON A FARM.—Every farmer is at times oppressed with a sense of the overwhelming number of things that requires to be done. We have seen a nervous man in such circumstances commence one job and before he had got fairly started, abandon it for something that seemed more pressing, merely to leave this in the same unfinished state; and when night came he had accomplished little or nothing, and passed hours tossing about on a sleepless bed thinking what he should do on the morrow. A young farmer could not adopt a better rule than to repeat to himself every morning, "Whatsoever thy hand findeth to do, do it with thy might," and act upon it. When a job is commenced, finish before beginning another; but, at the same time, attend to the little things. But if you happen to get behind, strike a lively gait, do one thing at a time, and when it is done, take a little rest by immediately commencing another, and in this way you will pull through in good time.

Tying Materials.

In small gardening operations the amount of tying materials required is not large, and the difficulty of obtaining a suitable article in the necessary quantity is not felt. In large nurseries and vineyards, it is quite another matter.—Unless the proper material is at hand, the work is poorly done, or so slowly as to cause a loss of time, and consequently of money. Last year we had an article on the cultivation of willow for nursery and vineyard purposes. The slender shoots of the Osier, or the Golden Willow, are largely employed by nurserymen in binding trees for packing, and by the vineyardist for fastening the canes of the vines to the trellis.—For tying up the young growth of vines, Papaw bark and cotton twine are used; and recently the shreds of gunny bags have been found available for the purpose. For the nicer ties required in budding, probably no material is superior to the bass bark. The Russian mats made of this material, are imported in large quantities, and are much used for packing furniture and other articles. The strands of a fresh, bright mat, softened by soaking, make a tying material that is nearly perfect. The Cuba bast is very strong, but it is too inflexible. The inner bark of our native Bass wood, or Linden, when well prepared, makes an excellent tie. In the French nurseries they use two aquatic plants, which, though common with us, we have not known to be employed by our nurserymen—the Bur-reed and Cat-tail. Both these are found along our ponds and in marshy places. The Bur-reed (*Sparganium*) is less known than the other. It is shown on the right-hand side of the engraving. It is from two to four feet high, has long ribbon-like leaves, and bears its flowers in dense globular heads, scattered along the stem; the upper ones are sterile, but the lower ones ripen into a spherical cluster of pointed seed-vessels, forming a bur an inch or more in diameter. The Cat-tail (*Typha*) is too well known to require description. These plants are collected towards the end of summer, dried in bundles, and stored away. When required for use, they are soaked for some hours in water, and then wrung out. Baltet, in his excellent work on the Art of Grafting, recommends these tying materials, but says: "A proper medium between wet and dry is necessary. If too dry the leaves lack strength and break; and if too moist they cause the decay of the bud." Some of the western nurserymen find Indian corn husks, those of delicate texture selected from the inner layers, to serve admirably as a tie in budding. It is preferred by some nurserymen to all other ties, as it decays very soon, and yielding to the growth of the stock, saves the trouble of removal.



CAT-TAIL.—(*Typha.*) BUR-REED.—(*Sparganium.*)

The Variegated Alyssum.

The common Sweet Alyssum (*Alyssum maritimum*), is a well-known, garden annual, forming large spreading tufts with numerous clusters of small, white flowers, which resemble those of the Candy-tuft in appearance, and have a remarkably sweet, honey-like odor. Of late years a variety with the leaves margined with yellowish-white has appeared in our collections, and is very useful in contrast with other plants, as its subdued color answers admirably to set off more brilliant things. The variegation is so fixed that it is reproduced true from seed. Seeds are yielded but sparingly, and the plant is generally propagated from cuttings, which are rooted with ease. It is frequently grown in green-houses in winter; and is useful for hanging baskets.

VARIEGATED ALYSSUM.

Growing Lettuce in Hot-beds.

BY PETER HENDERSON.

In this latitude the seed for lettuce to be grown in hot-beds should be sown, to be safe, at two different times, say, August 25th and September 5th. The variety best suited for the purpose is the Boston Market or Tennis Ball. Before sowing, the bed for the seed should be prepared in the very best manner by thoroughly plowing and harrowing, or digging and raking, and be enriched with short manure thoroughly incorporated with the soil. The surface being fined down by raking, the seed should be sown thinly; whether broadcast or in rows makes little difference, but if sown so that the plants will stand an inch apart each way, when they come up, they will be much stronger than if they are at half that distance. As the weather is often dry at the season named, the seed after being raked in should be rolled with a heavy roller or trodden down with the feet, particularly if the soil is dry. If the seed has been regularly sown, but little labor will be necessary except to pull out such weeds as may come up, but if too thick, the plants had better be thinned out to the required distance.

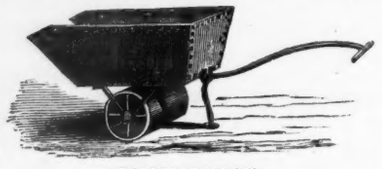
The next thing now is to prepare for the hot-beds. The best situation for them is a position sheltered by woods, hills, or fencing, from the north and west. The number to be used must govern the length of the lines; but we should say that a convenient length is 300 feet, or about 100 sashes in length, leaving a distance of nine or ten feet between the rows so that a cart or wagon can pass between with manure, soil, etc., also for the convenience of laying the mats and shutters used in covering. The pits for the hot-beds are sunk about $2^1/_2$ feet deep, and of the width of the sash—6 feet. Posts are placed along the back rising above the surface 9 or 10 inches, and along the front about 6 inches less, to give pitch. To these posts, boards are nailed; and across are placed the slides or rafters on which the sashes rest. This completes the making of the pit. As the lettuce plants will be fit to be planted about the middle of October, the manure or material for the hot-bed should have been in preparation, at least three weeks previous. This may either be horse manure mixed with leaves, or with refuse hops, or stable manure only; but of whatever composed it must be placed in heaps to induce fermentation, and frequently turned to "sweeten" it or dispel the rank heat. When ready it should be placed in the pit to the depth of about 18

inches; if rough it may be trodden down by the feet to that depth, but if short and heavy, it need only be patted down by the fork; for, if the heating material is short and wet, being too much trodden down it will "fire-fang," or burn itself out. On the manure, place 4 or 6 inches of soil previously prepared by having at least one-fourth of its bulk well pulverized manure. It is now ready for planting. The plants should be about 7 inches apart each way, or, about fifty under each sash. If the weather is mild after planting, the sashes must be lifted so as to ensure thorough ventilation, but they need not be covered at night with mats or shutters until frost comes. Through November no other covering except straw mats will be necessary; but from December onward the mats must be covered by shutters so as to entirely protect the lettuce from frost, or at least prevent it from getting frozen hard; a slight frost would not materially injure it, but if kept entirely clear of frost so much the better. If due attention has been given to the crop it will be ready for market about Christmas, or at least a portion of it, as it varies from Christmas until the end of January. At this season it brings at wholesale, if a fair crop, an average of $10 per 100 heads, giving, say clear of all contingencies, $4 per sash. Now to continue the use of the sashes, a reserve of plants must be on hand, that have been planted thickly in cold-frames, to plant in the hot-beds as soon as the first crop has been cut out. This is a simple matter now, for everything is ready, and all that is necessary is to fork up the soil a-fresh and plant as before; following the same process of protecting at night with mats and shutters, and ventilating during fine weather. The crop will come in by the first of April; at this time the price is sometimes lower, but rarely lower than $3 per sash. About the first of April is in time to plant the third crop of lettuce which will come in about the middle of May, bringing, say, $2 per sash. Thus the three crops give in the aggregate, $9 per sash. These prices are a fair average for the winter and spring of 1870. Let us look at the first cost and receipts of, say,

200 sashes, 3×6, at $3.00 each	$600
Construction of pits for same	200
200 ½ inch Pine shutters, @$1.50	300
150 straw mats, @$1.00	150
Labor of one person from 1st Oct. to 1st June	300
Cost of selling $1,800 at 10 per cent	180
20 loads manure at $3 per load	60
	$1,790
Product of the three crops of 200 sashes at $9 each	$1,800
Profit over all	$ 10

It will be understood that $1,250 of this amount of expenditure is capital invested in material that will keep in good working order, with a little repairing, for a dozen years. I have sashes in use now which have been in the service for 20 years, which may still do duty 10 years longer. I think it safe to say that the yearly profit at present prices (and they are better than they were twenty years ago), of 200 sashes properly worked in lettuce thus grown, would give from $800 to $1,000 a year to a man who was not afraid of putting his own shoulder to the wheel. It must not be supposed that 2,000 sashes would give a profit in the same ratio. For the reason as I have before said, in writing on vegetable products, that one man having a large quantity of a perishable article on hand will often experience a difficulty in selling it.

A ROLLER BARROW.—An implement in which the garden roller and wheel-barrow are combined, is in use in the public grounds and gardens in England. The engraving renders any description unnecessary. When used as a roller it may be brought to the desired weight by placing stones in the box, which is made of iron plate. It is emptied by lifting the handle and dumping the contents. It possesses advantages over a common wheel-barrow, as it is not, like that, liable to cut up the walks and lawns—a great annoyance, especially in wet weather. The



ROLLER BARROW.

implement is found useful in carrying away cut grass and fallen leaves, and in bringing fertilizers on to lawns, or in general garden traffic.

Summer Propagation of Shrubs.

Those who wish to multiply such shrubs as they have in their gardens, generally divide a clump or remove suckers, as the case may be. Some shrubs divide very well in these ways, but with others the stems thus separated are but poorly furnished with roots; and when set out, if they live at all, are a long while in becoming vigorous plants. It is much better to start vigorous little plants from cuttings. Nurserymen and florists who do things on a large scale, use appliances adapted to the work; and the amateur, seeing the extensive propagating houses, is apt to think that he could not succeed without a similar arrangement. With a saucer of clean sand and a supply of water, he can do, in summer at least, quite as well in a small way as the florist does in his large operations. We have before described and advocated what is called saucer propagation for verbenas and other soft wooded plants. Our own success and that of our friends, in multiplying shrubs by its use, induces us to commend it to those who have choice shrubs which they would like to propagate. A saucer or similar dish is filled with clean sand—beach sand will do if the salt is washed out of it. Cuttings of the green, tender growth of shrubs an inch or so long are stuck in the sand close together. The sand is then made thoroughly wet—"sopping wet," and kept so, the saucer being exposed to full sunlight. Success depends upon keeping the sand always wet; and as evaporation proceeds rapidly in summer, the process requires more care than when cuttings are treated in this way in the spring months. The Terrace-pot described by Mr. Henderson in May last would obviate the necessity for frequent watering. As soon as the cuttings show a root, no matter how small, they should be potted in small pots of good soil and placed in the shade for a few days. Weigelas, Spiræas, and a few other shrubs that we have tried in this manner succeeded admirably. We do not say that all shrubs will do as well, as they differ very much in the ease with which they strike root. Another method is to use hardened or partly ripened wood of the present season's growth, and place the cuttings in a frame covered by a sash and in a shady place. A substitute for a sash may be made by tacking a piece of muslin over a frame. This will admit sufficient light and prevent too rapid evaporation. The earth in which the cuttings are placed should be light and sandy, and water must be supplied as often as needed. Not only may cuttings of shrubs be treated in this manner, but those of Geraniums and other plants desired for the house in the winter may be rooted with ease.

Markets near Home.

The natural gravitation of produce is towards the large cities. This is true not only of the heavier productions of the farm, but fruits and garden vegetables find their way there as well. The small towns and villages within fifty miles of New York City are supplied in good part with fruits and vegetables that have first made a journey to the city, and are from here distributed to various points. The same is doubtless true of other large cities. The markets of towns and villages are poorly supplied with things that are produced in abundance in their immediate vicinity. Large city markets present advantages to both producer and consumer. The one who raises garden-produce is always sure of a sale at some rate; and he who would purchase is quite certain to find any article in season that he may desire. On the other hand the producer often suffers when there is a "glut in the market," and the purchaser has his articles in all the worse condition for long travel. We give an instance of what was done by a gentleman of our acquaintance last season, as an illustration of what may be done towards establishing a market near home. This gentleman grows strawberries largely, but he is a little north of New York; and by the time his fruit is ready the market is overflowing with berries from New Jersey, and he has been obliged to sell his fine fruit at the time when prices were at their lowest. Last year he took his fruit to "S.," a flourishing town about ten miles from his place, and had it understood that he would bring it regularly during the season. Both parties were satisfied with the arrangement; the people of "S." found that they need not send to New York for berries, and the grower obtained much better returns, as he saved freight and commissions. We have no doubt that what was done in this instance may be done in many others; and that growers who live near towns and villages will often do better in the long run to establish a market for perishable articles, in small places, than take the risks of the enormous competition always found in the larger ones. One essential to success in this matter is to convince the customers of the smaller place that the supply will be sufficient and regular; otherwise they will prefer to send to the great centers where they know that the supply is certain.

Notes from the Pines.

RHODODENDRONS!—It is very satisfactory to look at that group; to be sure there are only five plants; but if one wishes to see them by the acre he should go to Parsons & Co's Nursery in Flushing, where they are made a specialty. I don't know how a few dollars can be better invested in flowering shrubs than to use them for Rhododendrons. Only sorts of proved hardiness should be purchased. Many suppose that they require great care and petting, but they will grow in any good garden soil except it contains too much lime. They will stand a great deal of abuse. I have one in flower as I write, which two years ago some wretch pulled up, broke from it every flower cluster, and left it a wreck of a plant, too unsightly to be returned to its former place. I put it to bed in a pail, in a corner of the backyard for a hospital, and fed it on water. It broke finely and in autumn was well supplied with foliage and buds and the next spring bloomed as well as if nothing had happened to it. Aside from the beauty of their

bloom, the fine, broad foliage, which is green all the year, commends them.

MOVING A LARGE ARBOR-VITÆ.—A fine Arbor-Vitæ, twenty feet high and furnished to the ground, stood too near the house; and after much hesitation we concluded to move it. The earth was dug away so as to leave a good ball with the roots, and then it was to be transported to its new place upon a stone-boat. Everything was made ready, and some extra force called in; but the tree set all our calculations at naught. The sandy soil would not stay with the roots at all, but left them almost as clean as if they had been washed. The roots were kept wet until they were covered in replanting, and now the new growth is starting and the removal is thus far a success. August, however, will decide the matter.

POISON IVY is a great nuisance. One of us has been sorely poisoned by it. It is not only dangerous, but a miserable weed which is most difficult to eradicate. Probably only a small minority of people are susceptible to its poisonous influence, but it affects a sufficient number to make it a serious nuisance, and one which should be suppressed. In many places it covers almost every fencepost. If it is proper to make laws restraining a man from raising Canada thistles to infest his neighbor's land, there ought to be one to prevent him from poisoning his neighbors as they pass along the highway.

HONEYSUCKLES.—Dr. K. has the pillars of his veranda very neatly covered with honeysuckles; four vines run up at each pillar and are equally covered with foliage from the bottom to the top. We generally see naked stems below and a mass of branches above. The Doctor sets out a plant and allows four shoots to start from the root; these are each trained to a perpendicular wire. When the shoots are a few feet high the point is pinched; this causes a branch to start at each leaf; the uppermost branch will continue up the wire for a leader and after a while it is pinched again. The side shoots are also pinched if they grow too strong. The result is a stem with short branches along its sides, which makes a very neat appearance.

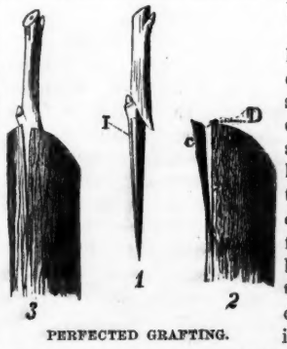
Can I Succeed as a Market Gardener?

BY PETER HENDERSON.

"D. H.," writes me thus: "I am a book-keeper with a salary from which I can save but little; but by rigid economy during a series of years, I have scraped together $2,000. My health is only ordinary. With that capital can I succed as a Market Gardener by hiring an experienced gardener?"——This inquiry is a type of hundreds I now receive annually, and to which may be given this general reply. From the nature of the question no very definite answer can be given, though I would say that the chances are two to one against success. It is a well-known fact that the chances of success in mercantile business are even far less than this. "D. H." may be a capital book-keeper, yet it is doutful if he has the necessary endurance to stand the wear on the constitution that market gardening involves. If he concludes to start at gardening, he is more likely than not to select a soil entirely unsuited to the purpose. In most sections of the country there are fewer soils suitable for the cultivation of vegetables than there are those that are unsuitable. Again, he is an educated man, and this very fact would be rather against him than otherwise; as it would naturally incline him to refined society and associations, which I am sorry to say the beginner in market gardening cannot possibly afford to indulge in. The hiring of an "experienced gardener" would take all the cream off of the profits; experienced market gardeners are exceedingly scarce; our laborers in the market gardens are generally an ignorant class, with very little ambition, and not one in a hundred of them is fit to manage. Though employing thirty hands myself, I have often been sadly at a loss to select from them a suitable man as foreman, though many of them had been with me for years. When one shows the necessary ability, his services are much sought after, and he readily commands $500 or $600 a year and board. Clerks, book-keepers, nor city-bred men generally, are not the ones likely to be successful as workers of the soil; few of them have any conception of the labor required to be done to ensure success. I started business in Jersey City at the age of 23, with a capital of $500, which it had taken me three years to make as a working gardener. For the first five years I was in business, I can safely say that we worked, on an average, sixteen hours a day, winter and summer, with rarely a day for recreation. Now the majority of clerks, book-keepers, or salesmen do not work much more than half that time, and few of them could endure this lengthened strain in a summer's sun,—and without this endurance success is out of the question; for all beginners to-day must do as we did until they get their heads above water,—or else such is the competition, they must go to the wall in the business; we therefore caution "D. H.," and all such who are not in robust health to avoid either farming or gardening, *if their necessities require them to make a living thereby.* That the work of the farmer or gardener is conducive to health when health has not been impaired, there is no question; but the long hours of labor and the exposure necessary to success must tell against a feeble constitution.

Perfected Crown Grafting.

Having occasion to graft over a pear-tree while it was in full leaf, we tried, for most of the limbs, what the French call the Perfected Crown Graft. The cion is shaped as shown in figure 1. The stock is prepared by cutting it off as for cleft grafting, but if only one cion is to be inserted, it is cut sloping as in figure 2. Instead of making a cleft in the wood, a longitudinal cut is made through the bark only. A thin line of bark is cut away from the left-hand edge of the wedge-shaped portion of the cion, as at *I*, fig. 1. The left-hand portion of the bark of the stock, (*C*, fig. 2), is slightly lifted and the cion thrust down between it and the wood, the edge, *I*, of the cion coming in contact with that portion (*D*, fig. 2), of the bark of the stock that is not disturbed. Figure 3 shows the cion in place. Two cions may be placed in a large limb, in which case it is cut off square, and the notch on the cion is square instead of slanting. The wounds are covered with grafting wax in the usual manner. The success thus far is very satisfactory; but it remains to be seen if the union will be strong enough when the grafts have grown larger. The operation is much easier to perform than to describe, and is quite rapidly done. After the stock has started to grow, this method is much safer than cleft grafting, which at that season is troublesome to do.



PERFECTED GRAFTING.

Peach Crates.

Planters will now be making ready for the transportation of their crop to market, and we give the following timely directions for making a crate from Mr. Fulton's very thorough work on Peach Culture: "The standard dimensions of a crate are eight inches wide, fourteen deep, and twenty-three and a half long, outside measure. They are made of pine or other light wood. The ends and partition are sawed three-quarters of an inch thick, seven and a half wide, and fourteen long. The bottom and top twenty-three and a half long, six and a half wide, and three-eighths of an inch thick. The sides are composed of four slats, twenty-three and a half inches long, two and a half inches wide, and also three-eighths of an inch thick. Sometimes lighter stuff is used. The ends and partition are thicker, because to these all the other pieces are nailed. The whole crate consists of thirteen pieces. It is very simple in construction, and any intelligent hand, with a proper frame, can put it up without difficulty. The stuff is sometimes planed on the outside, which gives it a much neater appearance. Crates cost from thirteen to twenty dollars per 100. —They go with the peaches, and are never returned;

CRATE.

hence, those who ship in crates must provide as many crates as they have fruit to fill them. The reasons they are not returned, are two. First: they cannot be packed in each other like baskets, but occupy precisely as much room as when full. They are much more troublesome to handle, and the transporters will not return them free of charge as they do baskets. Secondly: they are usually reshipped or sent at once to a distant market, and sold with the peaches."

WORMS ON CURRANT BUSHES.—We have often recommended the use of powdered white hellebore to destroy the caterpillars which feed upon the leaves of currant bushes. This is very efficacious, though it is somewhat inconvenient to use on account of the violent sneezing produced if any of the powder finds its way into the nostrils. Mr. H. G. White, of Buffalo, N. Y., finds a mixture of tar and soap to destroy the caterpillars. "Take of common pine tar a pint and twice the quantity of common soft soap; stir well together and pour sufficient hot water upon it to dissolve, and mix it; this will make about two pailfuls of the tar water. With a fine sprinkler, or with a syringe, wet the bushes thoroughly. This same mixture is better for rose bushes than soap alone, or whale-oil soap, as I have tried both." Mr. W. states that some of his neighbors find that coal ashes, put upon the soil around the currant bushes, keep them free from the caterpillars. This may be owing to the fact that a layer of ashes makes a barrier through which the parent insect cannot penetrate when it leaves its winter quarters in the ground.

Half-hardy Passion-flowers.

The most beautiful species of Passion-flower (*Passiflora*) can only be grown in the greenhouse; but there are two which can, with a little care, be kept in the ground through the winter, and though not so showy as the more tender ones, are sufficiently beautiful and interesting to repay the little trouble they require. The species referred to are the Blue Passion-flower (*P. cærulea*), from Brazil, and the Flesh-colored (*P. incarnata*), which is native from Virginia southward. These are vines, climbing twenty feet or more by means of tendrils, and producing lobed leaves and pretty flowers that are remarkable in structure. The one figured is the Blue Passion-flower, and shows the general characters of the flower in all the species. There are five petals and as many divisions of the calyx, which last are colored on the inside and give the flower the appearance of being composed of ten petals. Within the petals is a conspicuous crown of rays, or thread-like bodies, which adds much to the showiness of the flowers, as it is usually more strikingly colored than the petals. Then we have five stamens and one pistil, which bears three styles with large button-like stigmas at their extremities. The showy crown, which is composed of one or more rows of slender threads, has been a puzzle to botanists. Some regard the rays as modified stamens, and it is stated that anthers have been produced upon them. The fruit is a large berry with a tough rind, containing numerous seeds imbedded in a pulp. The fruit of many species is edible; that of our native Flesh-colored one is known as "Maypops," and that of a South-American species is the much esteemed Granadilla. The name Passion-flower was given by the early South-American missionaries who saw in different parts of the plant symbols of the crucifixion. The three styles were to them the three nails, two for the hands and one for the feet; the five stamens were the five wounds; the rays the crown of thorns; the ten parts of the calyx and corolla the Apostles; Peter who denied and Judas who betrayed, being absent; the tendrils represented the scourges, and the lobed leaves the hands of the persecutors. It does not need any such exercise of the imagination to make the Passion-flower beautiful; and it deserves to be classed with our most desirable climbers. Plants of the Blue species are to be had of the florists; it may be kept as a green-house plant, or, planted out to ornament a veranda or trellis. The stem is killed by the frost, but if the root has a good covering of leaves over it, it may be preserved through the winter. In warmer countries it is hardy, and forms a trunk as large as one's wrist. The native species is rarely seen in cultivation, probably for the reason that it, like many other native plants, is more difficult to procure than the exotic ones. It is, however, well worthy of a place in the garden. Another native species, found as far north as Pennsylvania, is the Yellow Passion-flower (*Passiflora lutea*), which has greenish-yellow flowers about an inch broad.

BLUE PASSION-FLOWER—(*Passiflora cærulea.*)

Pot-layered Strawberries.

The propagation of Strawberries by striking their runners in pots has already been recommended in these columns, but another season's experience has so impressed us with the superiority of this method, that we desire to call attention to it with more emphasis. It is not a process that commends itself to those who grow strawberries by the acre, but for the amateur it is of the greatest convenience; as it not only renders him independent of the season, but saves him a year's time. Let us suppose a runner roots at the present time in the soil of the bed. If taken up and planted out in the fall, it may bear a few berries next year, but not a full crop until the spring of 1872. If put out in the spring of '71, it will not bear until the spring following. If the same layer be rooted in a pot, and as soon as it is fairly established, it is turned out of the pot, say in July, it will make a strong plant before winter, and bear well the next season. One great advantage in using pot-layers is, that the roots are undisturbed, and the planting may be done in the hottest weather.—The operation of pot-layering is a very simple one. Prepare a compost of good garden soil, and well-decomposed manure, letting it be light, rich, and fine. With this fill small pots; some use them as large as 4 inches across, but the size known in the trade as verbena pots are sufficiently large. These may be had at the potteries at about a cent a piece, if many are taken. The pots of compost are sunk in the soil of the bed under a runner, before it has taken root and become fixed in the bed. The pots are plunged quite down to their rims. It will be found necessary to lay a small stone or clod on the runner to keep the wind from moving it out of place, or to fix the runner by pressing it into the soil of the pot.—Roots will be formed rapidly in the rich compost in the pots, and when the plant has become well rooted, it may be separated from the mother plant, and set in the bed where it is to fruit. The illustration shows the manner in which the pots are placed. After a runner takes root, it will throw off another, and this another, and so on. When but few plants are wanted, it is well to pinch off the secondary runners, and allow only those from the mother plant to take root.

STRIKING STRAWBERRY RUNNERS IN POTS.

THE HOUSEHOLD.

☞ *(For other Household Items, see "Basket" pages.)*

A Jelly Bag.

The brilliancy of jellies is secured by careful filtering through a flannel bag. The old chemists under the name of Hippocrates' sleeve made use of the same thing that we call a jelly bag. It is a conical bag of stout flannel, shaped as in the figure, stretched upon a hoop. One 14 inches deep, and 7 inches across the mouth, is a convenient size for ordinary use. The seam should be double stitched to make sure that no liquid will pass through it. As the bag requires to be washed, it ought not to be permanently attached to the hoop. A broad hem may be made at the top into which a wire or whalebone hoop may be inserted, or the mouth of the bag be finished by sewing a cord to it to make a strong edge. It can then be easily sewed to a hoop each time it is used. In straining jellies which solidify when cold, the bag should be hung near the fire. The first portion which runs through will be turbid, and should be poured back into the bag.

About Canning Fruit.

So much has been said about preserving fruit in air-tight cans or jars, that we are surprised that the inquiries still come for descriptions of the process. As our circle of readers widens, it each year includes new ones who do not seem to have practised this admirable household economy. Only a short time ago a letter came from Africa, saying that the writer had seen peaches from America put up in a thin liquid, and asking if we could find out how it was done. In our own families the canning of fruit is a matter of course, and we advise all who have never tried it to do so once; they will be sure to keep up the practice afterwards.

The Principle should be understood, in order to work intelligently. The fruit is preserved by placing it in a vessel from which the external air is entirely excluded. This is effected by surrounding the fruit by liquid, and by the use of heat to rarify and expel the air that may be entangled in the fruit or lodged in its pores. The preservation does not depend upon sugar, though enough of this is used in the liquid which covers the fruit to make it palatable. The heat answers another purpose; it destroys the ferment which fruits naturally contain, and as long as they are kept from contact with the external air they do not decompose.

The Vessels in which fruits are preserved are tin, glass, and earthenware. Tin is used at the factories where large quantities are put up for commerce, but is seldom used in families, as more skill in soldering is required than most persons possess. Besides, the tins are not generally safe to use more than once. Glass is the preferable material, as it is readily cleaned and allows the interior to be frequently inspected. Any kind of bottle or jar that has a mouth wide enough to admit the fruit and that can be securely stopped, positively air-tight—which is much closer than water-tight—will answer. Jars of various patterns and patents are made for the purpose, and are sold at the crockery and grocery stores. These have wide mouths, and a glass or metallic cap which is made to fit very tightly by an India-rubber ring between the metal and the glass. The devices for these caps are numerous, and much ingenuity is displayed in inventing them. We have used several patterns without much difference in success, but have found there was some difference in the facility with which the jars could be opened and closed. The best are those in which atmospheric pressure helps the sealing, and where the sole dependence is not upon screws or clamps. To test a jar, light a slip of paper and hold it within it. The heat of the flame will expand the air and drive out a portion of it. Now put on the cap; when the jar becomes cool the air within will contract, and the pressure of the external air should hold the cover on so firmly that it cannot be pulled off without first letting in air by pressing aside the rubber or by such other means as is provided in the construction of the jar. When regular fruit jars are not used, good corks and cement must be provided.

Cement is made by melting 1¼ oz. of tallow with 1 lb. rosin. The stiffness of the cement may be governed by the use of more or less tallow. After the jar is corked, tie a piece of stout drilling over the mouth. Dip the cloth on the mouth of the jar into the melted cement, rub the cement on the cloth with a stick to break up the bubbles, and leave a close covering.

The Process.—Everything should be in readiness, the jars clean, the covers well fitted, the fruit picked over or otherwise prepared, and cement and corks, if these are used, at hand. The bottles or jars are to receive a very hot liquid, and they must be gradually warmed beforehand, by placing warm water in them, to which boiling water is gradually added. Commence by making a syrup in the proportion of a pound of white sugar to a pint of water, using less sugar if this quantity will make the fruit too sweet. When the syrup boils, add as much fruit as it will cover, let the fruit heat in the syrup gradually, and when it comes to a boil ladle it into the jars or bottles which have been warmed as above directed. Put in as much fruit as possible, and then add the syrup to fill up all the interstices among the fruit; then put on the cover or insert the stopper as soon as possible. Have a cloth at hand dampened in hot water to wipe the necks of the jars. When one lot has been bottled, proceed with more, adding more sugar and water if more syrup is required. Juicy fruits will diminish the syrup much less than others. When the bottles are cold, put them away in a cool, dry, and dark place. Do not tamper with the covers in any way. The bottles should be inspected every day for a week or so, in order to discover if any are imperfect. If fermentation has commenced, bubbles will be seen in the syrup, and the covers will be loosened. If taken at once, the contents may be saved by thoroughly reheating.—Another way is to prepare a syrup and allow it to cool. Place the fruit in the bottles, cover with the syrup and then set the bottles nearly up to their rims in a boiler of cold water. Some wooden slats should be placed at the bottom of the boiler to keep the bottles from contact with it. The water in the boiler is then heated and kept boiling until the fruit in the bottles is thoroughly heated through, when the covers are put on, and the bottles allowed to cool. It is claimed that the flavor of the fruit is better preserved in this way than by the other.

What may be Preserved.—All the fruits that are used in their fresh state or for pies, etc., and Rhubarb, or Pie-plant, and Tomatoes. Green Peas, and Corn, cannot be readily preserved in families, as they require special apparatus. *Strawberries.* Hard-fleshed sour varieties, such as the Wilson, are better than the more delicate kinds. Directions for these, as well as for *Raspberries* will be found in a Basket item.

Currants need more sugar than the foregoing. *Blackberries* and *Huckleberries* are both very satisfactorily preserved, and make capital pies. *Cherries* and *Plums* need only picking over. *Peaches* need peeling and quartering. The skin may be removed from ripe peaches by scalding them in water or weak lye for a few seconds, and then transferring them to cold water. Some obtain a strong peach flavor by boiling a few peach meats in the syrup. We have had peaches keep three years, and were then better than those sold at the stores. *Pears* are pared and halved, or quartered, and the core removed. The best, high-flavored and melting varieties only should be used. Coarse baking pears are unsatisfactory. *Apples.* Very few put up these. Try some high-flavored ones, and you will be pleased with them. *Quinces.* There is a great contrast between quinces preserved in this way and those done up in the old way of pound for pound. They do not become hard, and they remain of a fine light color. Tomatoes require cooking longer than the fruits proper. See directions for these among Basket items. Any intelligent person who understands the principle upon which fruit is preserved in this way, will soon find the mechanical part easy of execution and the results satisfactory

Sleeping and Eating as related to Health.

BY FAITH ROCHESTER.

How many healthy men and women can you count on your fingers?—grown up persons who have no dyspepsia, rheumatism, bowel diseases, headaches, nervousness, nor any other of the long list of ills that flesh is heir to. These "visitations of Providence" are penalties for violating the laws of health; or, they are the harvest that results from the sowing of bad seed in the way of wrong habits. For the old sinners there is not much help nor hope; but how shall we save the children from the diseased and enfeebled condition of their parents? It is time for American women to take the matter in hand. It would be ludicrous if it were less sad,—the idea of such a set of feeble and nervous creatures as American women generally are, setting themselves up as the guardians of health! But all must agree that this properly falls within the natural "sphere" of woman. It is a household matter. For, you see, we women almost have it in our power to make or ruin the health and usefulness of the best and wisest citizens by our management or mismanagement of our homes. Mental and moral power depend largely upon the physical condition; and this depends upon the food we eat, the rest and exercise we take, the air we breathe, and the cheerfulness of our homes. Good sleep is essential to health. Both brain and body need plenty of rest to keep them in good working condition for a series of years. Nothing makes young women grow old-looking so fast as keeping late hours. Nine o'clock is the old-fashioned, country bed-time; and it is the best bed-time in a majority of cases. Of course the little children should go earlier. If they go to sleep in a happy frame of mind it will help much toward refreshing slumber. A cheerful "good night," and an affectionate kiss (if there is sufficient spontaneity about it to make it worth anything) are decidedly *healthful* for the little ones.

The skin is full of pores, through which impurities are thrown off from the system. This exhalation goes on more rapidly during sleep than at any other time. For this reason, if for no other, the body should be washed after a day of sweating work or play in the dust. Attention to this will do much in the way of preventing bowel diseases and fevers. On account of the exhalation of impurities through the skin during sleep, the bedding should be well aired, each day, before making up.

I have nothing to say about feather-beds. None of our family like them; but I would willingly provide one for any elderly person to whom habit had made it seem a necessity. The spring mattrass is generally satisfactory, but it needs a warm mattrass over it in winter. For my own use I should not ask anything better than a bed of well-cured corn-husks, or, a good straw bed covered with a rather thin cotton mattrass or a thick comforter. Such a mattrass can be easily washed. Corn-husks wear longer than straw, make less dust, and are more elastic. A *clean* hair mattrass is an excellent bed; but it seems desirable to use bedding that can be cleansed without much trouble. The hair of a mattrass can be washed in cool water, dried in the sun, and put back in a clean tick. With a board frame the size of your mattrass, fastened up like a quilting frame, and with an upholsterer's needle, you can make, or remake, your own mattrass. We made one so; but I always dread to take hold of the thick heavy mattrasses in taking care of sleeping rooms. Feather pillows remain in favor after the pretty general "going out" of feather-beds—which is unreasonable, since the head should always be kept cool. An evenly-tacked, hair pillow suits me

best. It gets hard after several months' use, but it is only a half-hour's task to pick up the hair and tack it in again. It is horrible to sink an infant's head in a soft, feather pillow, as cradle-babies are often treated. My babies have never seemed to need any pillow at all on a good mattrass; and, as I often sleep very comfortably without one myself, I am not inclined to give them pillows so long as they seem contented without. High pillows are always objectionable; producing round shoulders and curved spines. A straight position of the body in bed is essential to the healthy action of the lungs, heart, and stomach during sleep. I can remember how I used to curl up almost double in order to keep warm on winter nights. I used to throw my woolen dress and skirt on the outside of the bed over my shoulders, and then draw up my feet to get them under its warmth, while all of the time extra quilts and blankets lay piled in the closet close by. Of course such a position is not good for the circulation of the blood, or for its purification by the free introduction of fresh air to the lungs. Children should not be allowed to go to bed with cold feet. It is a foolish habit to rely on a soapstone or flat-iron in bed; and there will be no need of it if the feet are warmed before going to bed, especially if warmed by exercise. Much "toasting" is not good for any part of the flesh. Cold feet often result from indigestion and lack of exercise. Tight shoes and tight gaiters also cause cold feet by preventing a free circulation of the blood. A cool foot bath (not *cold*, but comfortable) and a good rubbing afterward, before going to bed, are better than a soapstone to keep the feet warm.

Not only should sleeping rooms and beds be well aired daily, but the rooms should always be ventilated during the night. It is best to have two openings on different sides of the room, so arranged that the bed does not stand in the draft; but any opening through which fresh air can get into the room is better than none. In a part of the country where mosquitoes abound, it pays, in every way, to have netting in at least one sash of each window. If you cannot do better, frames can be made of pieces of lath nailed together with the netting tacked on with tape (or narrow strips of cloth) and small tacks. As it grows dark all the mosquitoes that get into the room fly towards the light, and you can easily kill them on the netting before bringing a lamp into the room. Healthy sleep is almost impossible where insects of any kind have a chance to worry and devour.

Nothing would drive me so near despair (as a house-keeper) as to find that bed-bugs had got a lodging in the walls of my house. In a part of the country where they are common among your neighbors (and let all movers into a new locality take warning) "eternal vigilance is the price of" exemption from the nuisance. They come in books and papers that you lend, and they come in the garments of your visitors. Bats bring them too; and this is another reason for keeping netting in the windows when bats are abroad. Kerosene oil is a good poison for these insects, applied to the joints of the bedstead. So is a strong brine of salt and water; or corrosive sublimate; but kill every one you see, and look sharp.

When we get thoroughly civilized I believe we shall all have a good bed apiece, and never habitually sleep even two in a bed; but three in a bed are always too many, even when one is a baby—*especially* when one is a baby; it is quite too much for the little one.

Old people almost always awake earlier than young persons do, and are apt to feel quite out of patience with the morning naps of later sleepers. It is unfair; for the growing boys and girls who are in their teens seem to need more sleep than any other class, except the very little ones. If they must rise early they should be particular to go to bed early. Late suppers interfere very much with refreshing sleep. I don't mean party suppers, with their rich cakes and confectionery,—but farmers' suppers, which are often deferred until the day's work is all done, with an idea of saving time. The body is then so weary and the stomach so exhausted that good digestion is almost impossible; and yet this late meal is usually heavier than an earlier supper would have been. Broken rest, bad dreams, nightmares, and bad tastes in the mouth on awakening, are the natural results of late or heavy suppers. If the stomach gets through its hard work and can rest during sleep, there is no trouble about lying on the back. Sick headaches may often be traced to heavy meals when the body was too much exhausted to digest them properly. With an early breakfast and dinner at twelve, supper should come as early as half-past five or six o'clock at the latest.

Nearly all physicians agree that there is no more fruitful source of disease and death than intemperance in eating. It makes a great deal of difference *what* we eat, but quite as much difference to our good health *how* we eat; and I think it is the plain duty of parents to look after their children's habits in this respect. Those children are fortunate who early get accustomed to plain fare and regular meals. With three meals a day there is no necessity for any extra lunches. If any mother thinks her children an exception to this rule, it would be well for her to experiment a little. Have it understood that nothing but plain, unbuttered bread is to be eaten between meals or away from the table, and very likely the child who eats little at the table and gets hungry for cookies and pieces of pie between meals, will go hungry until the next meal rather than to eat bread alone. And yet there is no cruelty in this; for genuine hunger can be satisfied by plain bread. I have seen this tried, and think it a good way to break up a bad habit and save our children from dyspepsia.

There has been considerable talk in the health journals lately, about drink at meals—whether warm drinks or cold water was best. I have wanted to put in my word, and here it is. There is very seldom any necessity for drinking at all at meal times. We have learned this pretty thoroughly, and quite accidentally. When we "set up house-keeping," one half of our family of two was accustomed to use tea and coffee. The other half had an aversion to them. Neither was willing to be a law-maker for the other, but the subject was often pleasantly discussed. I was willing to make tea and coffee for my husband as long as he believed in their use; but he never felt quite comfortable taking these beverages alone. I could not conscientiously join with him, I saw so many miseries in the future as possible results of such a habit, and besides, we needed to economize. "Then let us drink water," said my husband. Soon after this decision, our little round table became somewhat crowded by an additional plate, and we began to set the water-pitcher and tumblers on an adjacent stand. I noticed that when I passed the water to one of my companions it seemed to suggest thirst where none had been previously felt; and, knowing that it is always unhealthy to wash down our food instead of chewing it thoroughly and mingling it well with the secretions of the mouth provided for the purpose of aiding digestion, I concluded to offer no one water until it was called for. This wrought a speedy change in our habits, and we were all surprised but well satisfied. For several years we have not been *in the habit* of drinking anything at meals, and think nothing about it. Between meals we drink water as thirst requires. When we have no outsiders with us, we never think of putting water on the table, though in the way of variety we often have milk, and once in a great while, tea or coffee. I notice that when I put water on the table for one person, others are immediately seized with thirst; but no young person stays with us long without unconsciously forming the habit of eating without drinking. I think our children will thank us, by and by, if we teach them to eat slowly, without drinking, and to chew their food thoroughly.

It goes far towards making food "set well" to eat it with no fear of evil results. Some people fancy that the chief reason why dyspeptics suffer from their food is their constant worry lest this or that will hurt them. There is some truth in it; but how can the poor sufferers help worrying at many of our tables, where healthful food is seldom found? I have known dyspeptics who could get along very comfortably at home, but who felt a great dread of taking a meal away from home, lest the only bread should be hot, shortened biscuit, and nothing else to satisfy hunger but rich cakes and preserves. We ought always to have plain, cold bread on our tables, and other food plainly cooked. For my own part, I feel responsible for most of the "general health" of those who eat at our table. If any of them suffer from indigestion in any way, I cannot help studying upon the case to find the probable cause and the most natural dietetic cure. There is nothing more wholesome than good, ripe fruit, *taken with our meals*. People suffer from eating fruit because they do not realize that it is *food;* and they load the stomach and tax the bowels with it when they are not in the least need of food, merely to gratify the taste.

Dear, *American Agriculturist* girls, if you could only for one moment realize your power to help this nation, and save its people from sickness and suffering, I am sure you would henceforth do your best to become strong and healthy, and try to learn every way of promoting the real benefit and comfort of those associated with you. Don't think of getting married, or of going to house-keeping, until you have studied physiology and household chemistry—some practical works on the subjects. I want to recommend Catherine Beecher's excellent works on Domestic Economy. There is one "old maid," at least, whose children (in domestic knowledge) all over the land "rise up and call her blessed."

Currant Jelly.—There is probably no jelly that we so seldom see of a fine quality as currant. One difficulty arises from allowing the fruit to become over-ripe. The constituent of the fruit which causes the juice to solidify into a jelly is most abundant as soon as the berries are fairly ripe. If left until later, a long boiling is required, which injures the color and flavor. The following process is commended by Mr. Harrison. "Boil the strained juice in a bright saucepan and skim until no more scum rises; while hot, strain quickly through a fine flannel bag, stir in rapidly one pound of finely sifted, white sugar for every pint of juice, and as soon as thoroughly dissolved, pour into cups. When cold, paste on paper covers, and set in a cool, dark, dry place.

Fruit Juices.—The juices of raspberries, pineapples and other fruits, are useful for flavoring ice-cream and similar purposes. The juice can be readily preserved by bottling. Express the juice and put it in bottles; set the bottles in a cold boiler with a board or grating under them to prevent contact with the bottom of the boiler. Heat up the water and continue at the boiling point until the contents of the bottles are heated through. Cork the bottles while hot, seal and keep in a cool place. The bottles should not be so large as to contain more juice than enough to use at once, as it will not keep long after being opened.

Aromatic Mustard.—Our request for recipes for preparing mustard after the manner of the Germans and other Europeans, has been replied to by several. The following is from Mrs. "W. S. K.," Rochester, N. Y.: "To 1 quart pure cider vinegar, add 2 tablespoonfuls each of ground allspice and cinnamon, 1 do. of cloves, 3 do. brown sugar, 4 do. salt, and 3 large onions cut fine. Boil until the strength is well extracted, say ½ or ¾ of an hour; then strain the vinegar, boiling, on to 1 lb best English mustard, and stir until it is perfectly smooth. If not thin enough, put more vinegar to the same spices, boil, and mix." This keeps well in a fruit jar, and improves by age. Boiling the vinegar for the length of time directed above would weaken it very much. The flavor of the spices would be extracted equally well by keeping the mixture nearly boiling hot in a covered vessel.... Another formula is given by Mrs. "E. D. C.," Meadville, Pa.: "4 tablespoonfuls of ground mustard, 1 do. flour, 1 do. sugar, 1 teaspoonful salt, 1 do. black pepper, 1 do. cinnamon, 1 do. cloves. Mix smoothly with boiling vinegar and let stand several hours before using. It may be thinned with cold vinegar. Will keep any length of time."

BOYS & GIRLS' COLUMNS.

Rambles in China—Chopsticks.

BY "CARLETON."

I wonder how the young folks of the United States would get on at dinner if they were to try to eat boiled rice with chopsticks instead of a spoon or a knife and fork! I should like to see you attempt it my young friends. But in imagination I hear you all asking this question, "*What are chopsticks?*"—Well, they are small sticks a little longer than a pen-holder and about as large. Those used by poor people in China are made of bamboo, while the wealthy people use those manufactured from ebony or ivory, or of silver and gold. They hold them very adroitly between the first and third fingers of the right hand—separated by the second finger and steadied by the thumb. If you wish to gratify your curiosity in the matter, just whittle out two sticks ten inches long and as large as a pen-holder, and the next time you have boiled rice for dinner see how you will get on; or you may pick up kernels of wheat for practice.

The Chinese handle them just as easily as we do our knives and forks. They would laugh to see our manœuvring with the sticks, but we should have the fun on our side if they were to sit down to our dinner table; they would make awkward work of it....."*Don't they use Knives?*"—Not to eat with. In preparing their food they whip a knife from their pocket and use it for cutting up a chicken or a puppy....*A puppy!*—I don't wonder you stare to hear it. It is well for your pet, who looks up into your face, licks your hand and wags his tail when you speak to him, that his master lives on this side of the globe, instead of on the other side, for he would not be permitted to enjoy long life in barking at the hens, in showing his teeth and putting on airs, but he would come to an inglorious end in a stew-pan! A Chinaman, though, might think it glorious. You would see some strange things were you to visit the land beneath your feet, especially in the eating line. Eating-houses and hotels in the great cities are more numerous than they are in New York or Philadelphia. They have traveling eating-establishments. You may see what they are by looking at the accompanying picture. The man who owns this establishment has it very ingeniously constructed. The large pole,—or handle of the huge umbrella,—is made of bamboo, which, though it is large, is strong, yet light, the bamboo being hollow. He sticks the lower end into the ground. The arms are also of bamboo, the ends set against the pole are inserted into notches which keep them in place. Loops in the edge of the canvass hold the outer ends of the braces. This great umbrella can be spread in two minutes, or it can be taken down and rolled up quite as quickly. The pedler of puppy stew walks through the street with a broad, shallow basin filled with the food already cooked, on the top of his head. He carries a small sheet-iron furnace on his back, and his big umbrella on his shoulder. He finds a place to suit him where customers are plenty, sets up his umbrella, lights a charcoal fire in his furnace, and in a few minutes the piece of fish, chicken or dog, mixed with rice, is warming and steaming in the pan. He takes his bowls and chopsticks from a basket and in a few minutes is ready to serve the hungry crowd. For a cent you can get a bowl full of nice, hot, dog stew!

See how that old fellow in the picture sitting upon the ground facing us, relishes it! The woman with a bowl in one hand and her money in the other, looks as if she was going to sit down to a splendid dinner. You see that she has a child on her back. It is in a bag..... *What a funny way to carry babies!*——When I was in China I saw a great many babies in bags. If they cry, the mothers quiet them by jumping as high as they can, which gives them such a thorough shaking up that the little creatures are glad to hush their crying.

We are not to think that all Chinamen live on puppies, cats, and kittens; it is only the poorest people who are obliged to live on such food. You would not be able to obtain much beef in China; but in the provision shops are excellent hams—also, ducks, geese, chickens, and fish; and in the vegetable markets you can always find a supply of potatoes, beans, peas, and likely you will find all of those in the bowl of stew which the pedlers sell.

To eat after the common manner you must hold the bowl to your lips and poke the food into your mouth; but if you would be genteel, you must pick up the bits of meat, the beans and the kernels of rice with the chopsticks, and carry them steadily to your mouth, and then drink the broth. If you want some fun you can have it without going to China in search of it, but in your own home, eating dinner with chopsticks. Try it.

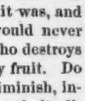
The picture gives an out-door scene; but if we were to go into the house of a wealthy Chinaman and were invited to dinner, we should be three or four hours at the table, and have at least three hundred different dishes containing food placed before us! I dined one day with a mandarin—or rather we had only a lunch—and there were so many dishes, and such a variety of food that I lost all reckoning of the number. First we had roasted pumpkin seeds, then drank some cherry cordial; then ate some sweet cakes and drank several cups of delicious tea—not such meadow-hay stuff as we get in the United States—but the very best China affords. Then the waiters brought in a great variety of dishes. Some of the food was sweet to the taste and good, and of other dishes a smell satisfied us. We should have had an uncomfortable time if we had undertaken to eat heartily of every dish. To be genteel in China you must only taste and nibble a little of everything brought on by the waiters. That is no light affair at a great dinner where three hundred kinds are served for the guests. The Chinese drink a great deal of tea at their dinner parties, but do not have wines or liquors. You hear no popping of champagne corks. The guests are able to walk straight and talk straight as well, which some people in this country are not able to do after dinner. We think of the Chinese as being uncivilized; but they do not make beasts of themselves by getting drunk, and then, in their drunkenness commit horrible crimes by beating their wives and children, or shooting their best friends. The Chinese are wise enough not to drink whiskey, brandy, or any such liquors; and in that matter I hope all who read the *Agriculturist* and those who do not, will, in this respect, follow the example set by the inhabitants of China.

CHINESE EATING WITH CHOPSTICKS.

Let the Birds'-Nests Alone.—It is thoughtlessness that makes a boy rob a bird's-nest. If he would stop a minute and think how unkind it was, and how little good the prize would do him, he would never take a bird's egg nor break up a nest. A boy who destroys eggs and nests does not deserve to have any fruit. Do you know that just in proportion as birds diminish, insects increase, and as insects increase, the fruit diminishes? In many parts of the country the insects have it all their own way, because there are no birds to keep them in check. Recollect then, no birds, no fruit.

Answers to Problems and Puzzles.

381.—The 19 trees are to be planted as shown in the annexed diagram, where the dots represent the trees and the lines the directions in which the rows may be counted to make nine.



382.—The 40 lb. weight must be cut into pieces weighing 1, 3, 9, and 27 lbs.; by the use of these any number of pounds from 1 to 40 can be weighed. For example, to weigh 25 lbs. the 27 lb. and 1 lb. are put into one scale and the 3 lb. into the other.

383.—At the commencement the men sold 7 eggs for a cent. The 1st sold 7 cents' worth, and the other 4 cents' worth, and the 3d 1 cent's worth. Afterwards they raised the price of their eggs to 3 cents apiece. It will be seen that by selling their eggs at this price, each received 10 cents.

384.—Think before you speak.—Th-ink-Bee 4 u's-peak.

385.—A life beginning in pleasure and ending in misery is often the fate of the inconsiderate.—Ale I F E bee-gin-in-G-in P Lease Ewer and n-d-in-g in miser-y is o F 10 thief 8 of the in c on S I D R 8.

The following have sent correct answers since our last: R. M. Downie, W. P. Brown, M. F. Herron, Liss Hall, L. E. Shriver, C. Hicods, Louis Fox, E. S. Vacher, J. P. Treece, O. A. Towne, W. W. Cutter, M. H. Sue, B. Manifold, Lizzie M. Gilchrist, A. Garrett, W. Kingsbury, C. A. Sage, J. H. Snyder, Geo. M. Hemmingway, G. D. Bunyan, "T. H. J.," N. H. Rice, T. Lansdale, M. B. Eshleman, G. Edgar Leach, J. Ferris, A. M. L. Golder, L. P. Hitchcock, Belle Greeley, Isaac Shaver, Jas. H. Williamson.

New Puzzles to be Answered.

No. 386. *Illustrated Rebus.*—A statement that cannot be controverted.

No. 387. *Illustrated Rebus.*—A poetical quotation, which, unfortunately for human nature, is too true.

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CHINESE KITE-FLYING.—*Drawn and Engraved for the American Agriculturist.*

No. 388. *Age Puzzle.*—A boy on being asked his age replied that ½ and ¼ his age and 20 more would make a sum three times his age. How old was he?

No. 389.—A letter was sent addressed as here shown. Who was it intended for and where did the man live?

Wood
I
Mass

No. 390.—A man had three bushels of corn to grind by horse-power, and he had three horses; how could he arrange so that each horse would grind two bushels of corn?

A Very Old Record.

I suppose all of you boys and girls know that 245 Broadway is directly opposite City-Hall Park. It isn't much of a park now that the new Post-Office has taken off one end and new city buildings are filling up the other end. These city buildings contain all the old records dating away back to "early times." But the record I saw the other day was older than even these musty papers and parchments—it was a story of what happened before the city buildings were erected, before new New York was New Amsterdam, even before Columbus went on that yachting excursion of his. It was not the record of any man's doings, but the story of the work of the sea; how its waves had rolled and cast up sand, now fine and now coarse, now of one color and now of another shade; and how the sand was piled grain by grain and layer by layer, until the land was formed upon which the busiest and densest part of this great city now stands. The way this record came to be exposed was this. In laying the foundations for the new Post-Office, they dug an enormous cellar in the park right down some thirty feet, and on the perpendicular sides of this excavation could be read the story of what the sea had been doing long, long ago. Some of you may think that the sea didn't make the sand-heap upon which the lower part of the city stands. The few feet near the surface show man's work; there was a layer of soil, another of rubbish, another of gravel—several layers showing the changes that former inhabitants had made; and these did not more plainly tell the story, that at one time there was filling with earth, and at another a dumping of rubbish, and at another a covering with gravel, than did the layers below record what the sea had done. Now if I had called this a "geological talk" you would not have cared anything about it. All that geologists do is to observe the appearances the earth presents and then try to give an explanation of them.—Though every person, who was living when the dirt and rubbish were placed just below the present surface, may now be dead, we have every reason to believe that somebody put it there, as it looks exactly like some similar material that we have ourselves seen deposited; so the sand layers below looked exactly like the sand that we may find upon the sea-beach, that was thrown up only a few days ago; and as we know of no other way in which sand could be arranged to look as this did, we are warranted in calling it the record of what the sea did more years ago than we are able to guess. WILL WARREN.

Kite-Flying in China.

Carleton's description of the way in which the curious old Chinamen amuse themselves by flying kites, no doubt interested every boy. We have come across a picture, in which the artist represents the scene as he saw it, and give it above. Between the report of our friend Carleton given with the pen, and the report of the artist made with a pencil, you will have a very good idea of one of the customs of a people whose ways are so unlike ours. After all, some of our people who are no longer boys do some kite-flying—only it takes the shape of fast horses, stock gambling, and various other shapes which are not quite so innocent as those indulged in by the pigtailed old people in the picture. There is considerable sport in flying a kite, and we know a learned man of seventy years, who enjoys it as much as any boy.

Do You know How to Swim?

Every boy and girl should know how to swim. It is generally thought to be an accomplishment more proper for boys than for girls; but there is quite as much need that girls too should know how. It is great sport, and the boys should not have all the fun to themselves. But as a matter of security against accidents, it is very desirable that every one should be able to swim, or at least, to keep their heads above water. There is one proper time for young people to learn to swim, and that is—when your parents will consent to it. The judgment of older people should be taken in regard to the safety of the place in which to learn, and it is best for those who cannot swim to have an older person by, until they learn. In trying to swim, always let your progress be towards shore. Wade off until the water is up to your breast, and then try to swim to the shore, taking it calmly and not making too hard work of it. Of course the attempt should be made where the water gradually deepens, where the bottom is safe, and where there is no strong current. These are things that boys should not trust their own judgments about. When you have learned to swim without clothes, or at most bathing drawers, put on a pair of old pantaloons and try to swim with them. It will be found difficult at first, but it can be done; then try a shirt and vest, and, finally, shoes. But few persons learn to swim in clothing, and it is the most important thing about it. When one goes overboard by accident, he has no time to remove his clothing; and it is not well to wait until such an event happens before you find out how much more difficult it is to swim with clothing than it is without. It is not easy to give directions in swimming; the best way is to follow the instructions of some older friend, or of your parent. Try and be a good, straight-ahead swimmer, before you attempt any of the many fancy tricks. Learn to swim first, then to float, and then to tread water; these are the most useful; afterwards you may add as many extra styles as you choose.

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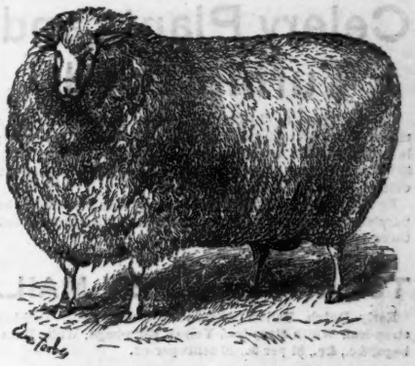

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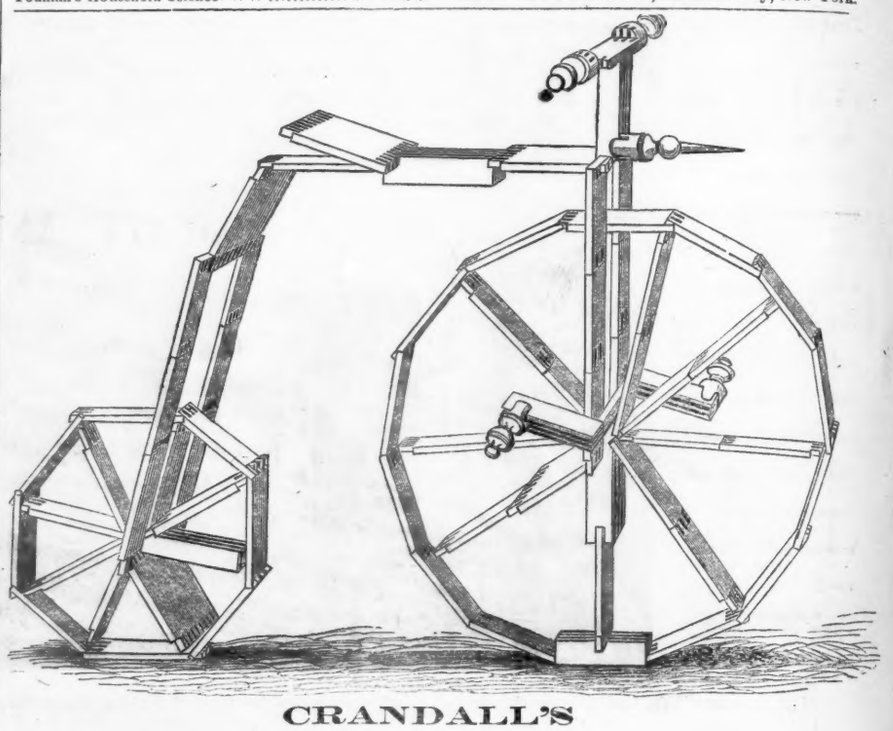

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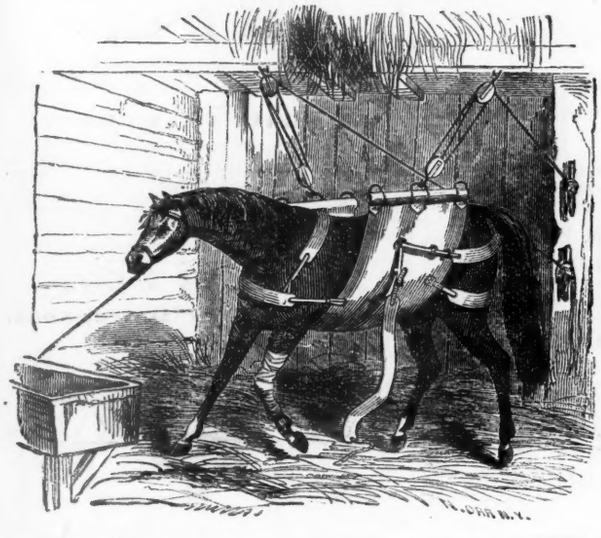

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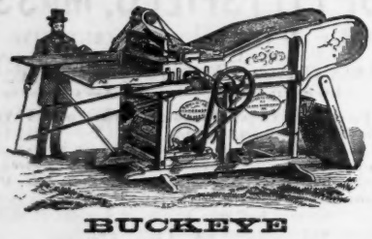

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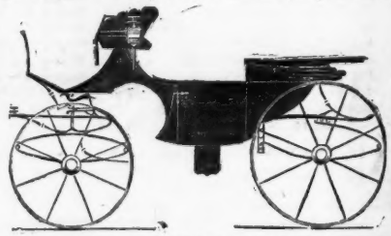

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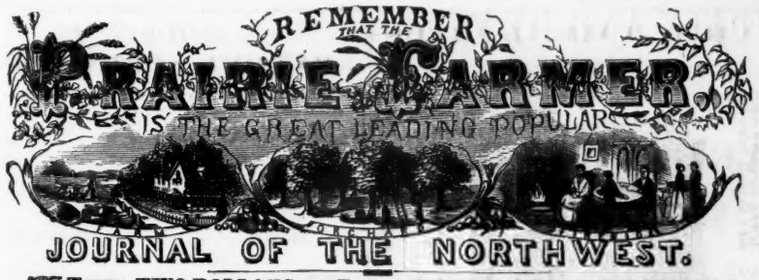

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Saponaceous Compounds

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Frequent mention has been made in the columns of the *American Agriculturist* of Carbolic Compounds, as being valuable for destroying insects on animals and plants, and for other purposes. For some months past we have been investigating the merits of these preparations with the following results.

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We have watched with great interest the results of various applications of these compounds, knowing that if successful, they would be of incalculable benefit to the community. By tests made under our own supervision, and the reports of careful observers, we believe it to be established that these Cresylic Compounds are

1st. Complete Disinfectants.—They not only remove all noxious odors from sinks, privies, stables, etc., but will destroy all infection in clothing, rooms, etc., washed with their solution. Thus, contagion from Small Pox, Typhus Fever, Cholera, and other diseases, may be effectually prevented. They are used in the New York and other Hospitals for these purposes.

2d. Insect Destroyers.—An animal washed with Carbolic Soap will be entirely freed from all vermin. It will destroy ticks on sheep, fleas on dogs, lice on cattle or poultry, roaches, ants, bed-bugs, etc., in rooms. It repels flies from animals, and thus is especially useful in case of wounds or sores from any cause.

3d. Preventive of Fungus Growth.—On this point we ask for further experiment. We feel confident this soap, properly applied, will prevent smut in wheat, mildew on vines, and similar parasitic growth, and trust that experimenters will furnish the result of their trials.

4th. Cleaning Sores, etc.—For washing ulcers and other foul sores, and preventing gangrene in wounds, etc., Carbolic Soap is, we believe, unequaled. We know also that it has been successful wherever used, for footrot in sheep, and mange, itch, ring-worm, and other skin diseases.

From numerous RECOMMENDATIONS of Cresylic Compounds, the following are selected as being specially valuable.

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MESSRS. BUCHAN & CO.—*Gentlemen*—Some months since we purchased a large building which had been used as a tenement establishment for thirteen years, and was occupied by some ninety families. We tore away partitions, turning between three and four hundred rooms into less than one hundred. We found the walls and floors perfectly infested with vermin. We used freely, in cleansing, the CARBOLIC SOAPS, manufactured by your firm, and with the very best results, as the bugs, etc., have entirely disappeared. We propose to continue its use in cleaning our dormitories, hoping then to keep clear of a plague so common to all housekeepers in cities. S. B. HALLIDAY, Supt.

CORPUS CHRISTI, Texas, March 15, 1868.

MESSRS. JAMES BUCHAN & CO.—*Gentlemen:* Your Sheep Dip is wonderful in its effects. I have dipped 2,150 head with nine months' fleeces on their backs. It is now three weeks since, and no scratching as yet. Your Dip is far superior to tobacco, not so disagreeable or unpleasant, much less trouble and more permanent.

I have used it on horses when diseased with a species of mange or itch, and it has the same good effect as on sheep.
F. W. SHAEFFER.

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MESSRS. JAMES BUCHAN & CO.—*Gents*—I have used your SHEEP DIP for two years, and think it is the best preparation that I know of for destroying Ticks and Lice on sheep and cattle. It is far preferable to Tobacco, and should think it would be a sure cure for scab. BURDETT LOOMIS.

OFFICE BROOKLYN CITY RAILROAD COMPANY,
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I take great pleasure in recommending the CARBOLIC DISINFECTING SOAPS, manufactured by Jas. Buchan & Co., for the cure of all external diseases to which horses are subject. I tried the *Ointment* on a horse with a severe fistula on his shoulder as a first test, and with entire success. And I cannot speak in sufficiently strong terms of its healing qualities, in all cases of galls, scratches, bruises, swellings, etc. I am using the soap in all of our stables.

No person owning a horse should be without these soaps; for, in my long experience with horses, I have never found any thing to compare with them. HENRY PALMER,
"Supt. Horses Brooklyn City R. R. Co."

NEW YORK, Dec. 1, 1869.

Messrs. BOWMAN & BLEWETT.—*Gentlemen*—Having used your Carbolic Laundry Soap in our Laundry for the past two months, and finding its cleansing properties *so far superior* to any soap we have ever used, we take the very *greatest pleasure* in recommending it to every laundry and family in the country. Our goods are whiter by far, more easily and thoroughly cleansed from every stain, grease spots, etc., *and this too* with 50 per cent less soap, and our premises are kept sweet and clean by its use.
Yours respectfully, ANDRUS BROTHERS.

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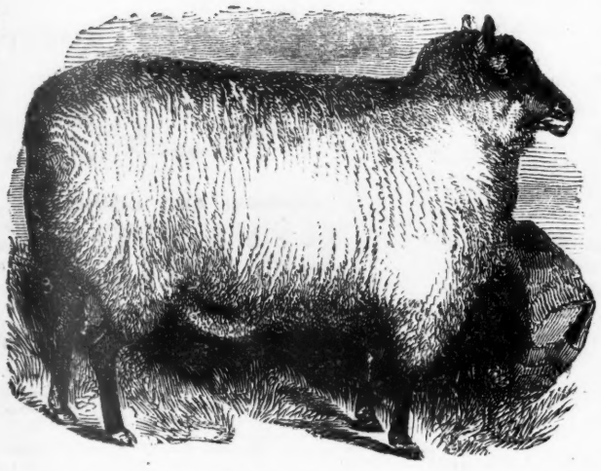

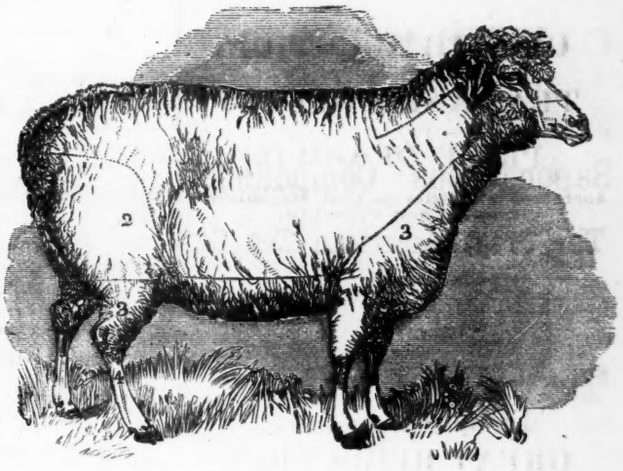

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